

# Air Conditioning & REFRIGERATION

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# NEWS

## Appliance Promotion Now Urged As Cushion for Post-War Slump

Utility Men Warn Against Letting Defense Demands Stifle Normal Business

By T. T. Quinn

CHICAGO—However heavy the power and production demands of the national defense program, companies and appliance dealers must continue to aggressively promote the use of labor-saving electrical equipment for the home and other normal applications, to serve as a "shock-absorber" during the transition period which is bound to follow the let-down in present industrial activities, it was emphasized by speakers at last week's eighth annual sales conference of Edison Electric Institute in the Edgewater Beach hotel here.

This note of preparedness for the post-war period, sounded by R. E. Fisher of Pacific Gas & Electric Co., chairman of the general sales committee, in his opening address, was repeated time and again by speakers during the two-day meeting. Indicative of power company interest in present and future problems is the fact that more than 600 utility representatives registered for the conference, a new all-time attendance record.

In addition to talks bearing directly on the defense program by such men as H. P. Liversidge of Philadelphia Electric Co.; B. W. Clark, Westinghouse Electric & Mfg. Co.; C. W. Kellogg, president of Edison Electric Institute; and C. H. Lang, manager of apparatus sales for General Electric Co., the conference heard discussions of such everyday problems as "Helping Customers Keep Appliances Repaired," by R. H. Fite, Jr., of Ebasco Services; "The Farmer Helps Build the Hi-Line Load," by D. M. Hobart of Curtis Publishing Co.; "The March of Modern Kitchens," by W. H. Sammis of Commonwealth & Southern, chairman of Modern Kitchen Bureau; and "A Dealer's Viewpoint on Utility-Dealer Selling," by J. T. Meek, director of the Illinois Federation of Retail Associations.

The power industry is being brought more and more into this country's "all-out" aid program, Mr. Fisher declared—and it is ready for the task. American industry leads the world today because of its expanded use of electrical equipment, (Concluded on Page 32, Column 1)

## Philco Uses Tinned Copper Ice Trays

CHICAGO—Heavy tin-plated copper ice trays will be supplied with 1941 Philco household refrigerators, according to an announcement made to distributors by Sayre M. Ramsdell, vice president and promotion manager of the company.

Discussing the shortage of aluminum under the national defense program, Mr. Ramsdell told distributors that while some 4,800 refrigerators had been shipped in recent weeks without ice trays, in conformance with the request of the Office of Production Management, the company was now in production on the new copper trays.

Mr. Ramsdell asserted that sales of refrigerators by the company, so far this year, had been double the same period of last year, but that the company was making deliveries on schedule, in the face of a continual succession of strikes among suppliers.

## Clergy a Major Buyer Of Room Conditioners

ST. LOUIS—One of the most surprising facts in connection with dealer-merchandising of package air conditioning during the past two years in St. Louis is the fact that clergymen were among the top ranks of customers, reports R. C. Beumer, sales manager of the Arthophone Corp., Philco-York outlet.

Outstanding were sales made to Catholic priests and other dignitaries, totaling over 100 units. Priests, it was pointed out, live in sequestered ways which mean that comfort is more than usually essential to their activities—and consequently, package air conditioning is a boon to them in their studies, chapels, homes, and even in cathedrals. In one large cathedral, for example, there are now 11 ½-ton room conditioners.

Union Appliance Co., dealership for G-E room conditioners, states that priests provide an extra incentive to the dealer in that they quickly provide the names of other prospects in their own parishes, businessmen as well as clergymen.

## Dealers Can Thank An Iceman For Defense Sales!

WASHINGTON, D. C.—An iceman may have given retailers of electric refrigerators "the break" that they got when the second defense housing appropriation bill recently passed without a provision for the installation (as part of the original equipment) of these appliances in defense housing projects.

As reported in last week's issue of AIR CONDITIONING & REFRIGERATION NEWS, the Federal Works Agency under the first appropriation bill set out to equip the 68,000 units on the program with major appliances, purchasing these direct from the manufacturers. But an amendment to the second bill provides that no movable equipment shall be installed in the housing units unless the Federal Works Administrator shall deem it in the public interest.

Thus, the well-paid workers on defense projects will probably buy their own refrigerators and ranges—thus opening up a new market for dealers.

And all this, according to a recent "Washington Merry-Go-Round" column written by Drew Pearson and (Concluded on Page 9, Column 1)

## Ward 'Downtown' Store Rumored

ST. PAUL—What is said to be Montgomery Ward & Co.'s first "downtown" store to be devoted exclusively to the merchandising of major appliances is scheduled for opening here sometime during April.

The new Ward appliance store is located on Seventh Ave. between Wabasha and St. Peter, in one of the city's busiest blocks. In the same block are located the Orpheum and Paramount theaters, two of St. Paul's largest show houses.

Ward's refrigerator volume is currently reported to be running about double that of 1940, spurred by a \$500,000 advertising campaign.

## Mueller Nets \$297,227 For the Quarter

PORT HURON, Mich.—Net profit of \$297,227 for the quarter ended Feb. 28 was reported by Mueller Brass Co. This is equal to \$1.12 a share, compared to \$183,733 or 69 cents a share for the same quarter last year.

## Room Cooler Data

Special feature of this issue is key product information on 1941 models of self-contained or "packaged" air conditioning equipment. Starting on page 6 and continuing through a number of succeeding sales, engineering, and market pages is specifications data on all of the leading makes of "packaged" conditioners.

## Philco Adds 3-4 Hp. Room Cooler To Sell at \$259.50

CHICAGO—Philco has extended its 1941 line of window-type room coolers to a ¾-hp. model having a rating of 7,500 B.t.u. Priced at \$259.50, the new conditioner is identical in size with the company's ½-hp. model, and was designed to cool large offices and living rooms without using valuable floor space.

All models in the 1941 Philco line are new, with the exception of the ½-hp. window model carried over from last year. All are equipped with newly styled wood cabinets, centrifugal fans, and two speed air controls. The new models, together with the Philco window ventilator, were presented to distributor conventions by Robert F. Herr.

Because it assumed a dominant position in the trade last year, Mr. (Concluded on Page 4, Column 1)

## Peerless Operating In Marion, Ind. Plant

MARION, Ind.—General offices of Peerless of America, Inc. and all production activities of the company are now centered in the firm's new factory here, the former Indiana Truck Co. plant comprising a one-story building covering about 185,000 square feet of floor space situated on a 19-acre factory site.

All executive offices and functions, including purchasing, have been moved to Marion. All productive facilities formerly located in Dallas, Los Angeles, and Chicago have been moved to Marion, and the New York equipment will soon follow.

Sales offices will be maintained as usual in Chicago, New York, Dallas, and Los Angeles.

The Marion plant is in partial production now, and shipments are being made, filling all orders.

## U. S. Judge Rules Distributors Are Under Hour Law

When Goods Go To Firm Over State Line, Law Is Effective, He Says

WASHINGTON, D. C.—Contention of the Wage and Hour Division of the U. S. Department of Labor that wholesale distribution of goods which have crossed the state line is an operation covered by the Fair Labor Standards Act, even though the goods do not thereafter leave the state in which the distributor is located, has been upheld in its first test before a Federal court.

Judge Robert L. Russell of the northern district of Georgia has ruled that Alterman Brothers, an Atlanta wholesale grocery concern, was covered by the Wage and Hour Law, in enjoining the firm against further violations. According to the court's interpretation in this case, most distributors of major appliances also would apparently come under Wage and Hour regulations.

Importance of the ruling may be inferred from the fact that, according to estimates by the Bureau of Labor Statistics two years ago, the wholesale trade employs more than a million and a half workers, 80,000 of whom were reported as receiving less than 30 cents an hour, minimum wage under the Fair Labor Standards Act, and 447,000 of whom were working in excess of 42 hours per week. The Act provides that workers be paid time and a half for all hours worked in a single work-week in excess of 40.

In his decision, Judge Russell said: "The Alterman business is that of distribution; after the getting together of grocery products from all parts of the United States, it assembles and transports them to the hundreds of retail and distribution outlets, thus forming the connecting link between the interstate shipper and the retail stores for consumers. Products move continuously through the wholesaler without any change, and for the most part without being unpacked. . . .

"Argument of defendants is based upon the proposition that, since the defendants do not ship goods out of the state, and confine their activities solely within the state of Georgia, that they are not engaged in interstate commerce. . . .

"Interstate commerce must have a beginning and an ending. It makes no difference whether the beginning is little and the ending big, or the (Concluded on Page 32, Column 4)

## 'Air Conditioning's The Answer To Lagging Steel Production'—Carrier

WASHINGTON, D. C.—Air conditioning of blast furnaces in the nation's steel mills to increase production and thus forestall the iron and steel shortage anticipated this spring because of the rising demands of defense activity has been suggested by Willis H. Carrier, chairman of the board of Carrier Corp., in a radio interview originating from Station WJSV here and broadcast over the Columbia Broadcasting System.

According to Mr. Carrier, one company already has conditioned three of its furnaces. "Results of this operation show," he declared, "that in addition to turning out a better quality of pig iron, air conditioning is helping to reduce the cost of production and has increased the pig iron output by approximately 15%."

"The savings," he explained, "result from substantially lower consumption of coke. Coke requirements of the conditioned blast furnaces have been reduced approximately 200 pounds per ton of pig iron, it is estimated.

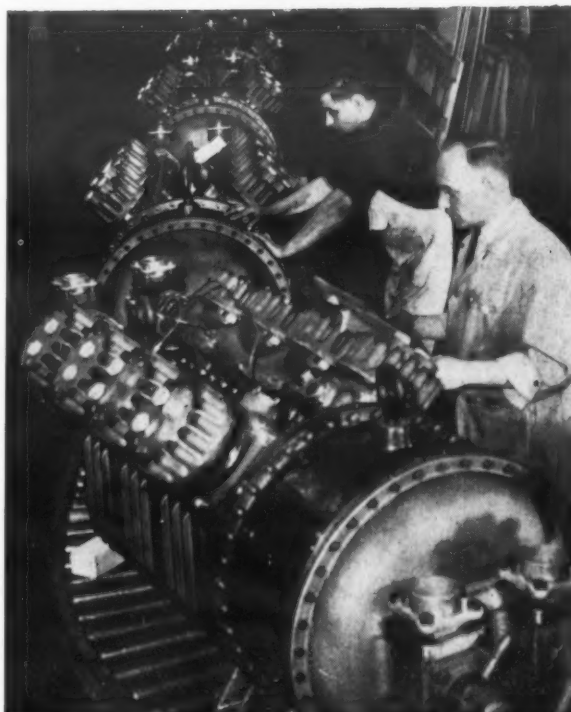
The need of less coke in the furnace also permits an increase in the amount of iron ore charged at one time.

"Scientific regulation of the moisture content of the air delivered to the furnaces is the chief function of these conditioning installations. In the making of pig iron, furnaces require more than 4,000 tons of air per day. The air conditioning system removes approximately 30 tons of water from this air each day.

"It is my understanding," Mr. Carrier continued, "that the steel industry will fall about 10,000,000 tons short of the total amount required for defense and consumer activity this spring. At the present moment the American steel industry is equipped to produce roughly about 83,000,000 tons of steel annually.

"So if each blast furnace could step up production by approximately 15%, it would result in turning out 12,450,000 tons of steel over the present capacity—an increase which would just about satisfy the estimated requirements."

## To Cool 'Blackout' Defense Plants



These Westinghouse refrigeration compressors for air conditioning work are going off the production line for shipment to the U. S. shell factory in Gadsden, Ala. and the Douglas aircraft plant in Long Beach, Calif., both of which are sealed, "blackout" plants in which normal temperatures might go to 110° F. and higher. Enemy bombers would find it difficult to put the air cooling systems out of commission. A total of 47 compressors will be located throughout the factories, each unit cooling a small area.

## When Ducts Won't Reach, Add 'Packaged' Units

CHICAGO—A new use for store cooling units was found here last year in connection with an air conditioning system installed for the J. R. Thompson restaurant chain. Two 4-ton store coolers were located at the front of the Thompson restaurant, to supplement a 30-ton central station air conditioning system.

According to Hal Wheeler of Air Comfort Corp. this use of packaged units solved a number of difficult problems. Because of the architectural arrangement of the restaurant, and the decorative ceiling, it was impossible to run ductwork to a point near the front of the building.

To provide conditioned air in the area that could not be reached by ductwork, Air Comfort Corp. installed the two packaged air conditioning units. Thus serious installation problems were avoided and an even summer temperature was maintained throughout the conditioned space.



## N. D. Craighead Appointed Deepfreeze Sales Manager

NORTH CHICAGO, Ill.—Appointment of Norwood D. Craighead as sales manager of Deepfreeze division of Motor Products Corp. has been announced by Willard L. Morrison, general manager of the division. Mr. Craighead has been associated with the sale and promotion of major appliances for the past 18 years.

## Refrigerator Damages Irk Calif. Movers

SAN FRANCISCO—In an effort to reduce the number of damage claims resulting from the handling of household refrigerators, the California Van & Storage Association at its recent convention approved preparation of special instructions covering the handling of this equipment.

In discussing the subject at the convention, consensus of opinion was that the sealed type of units do not require anything but draining. Some of the open-type models, however, should be anchored down by a wire clamp, because the motor is suspended on springs, it was said.

Activated carbon was suggested as the best remedy for naphthalene odor picked up by the insulation in storage. Naphthalene is used in the warehouse to protect stored articles from moths, etc. Sentiment at the meeting favored leaving refrigerator doors open while units are in storage, to avoid mould and damage to rubber door gaskets.

## It's Lt. Ferrill Now



Lt. Ed Ferrill, U.S.N., who was chief engineer of Kerotest Mfg. Co.'s brass division before the navy called him, thanks J. A. Strachan, Kerotest sales manager, for the dispatch case which Kerotest men gave him when he visited the plant on a recent leave.

PITTSBURGH—When Ed Ferrill, who was in charge of the brass engineering department of Kerotest Mfg. Co. prior to being called up for active duty by the Navy Department, returned to Pittsburgh for a visit recently fellow Kerotest employees held a celebration for him and presented him with a dispatch case.

Mr. Ferrill is a graduate of the United States Naval Academy at Annapolis and was a member of the U. S. Naval Reserve when called up. He holds the rank of lieutenant and is at the Philadelphia Navy Yard.

## Chicago Cooling Jobs At All-Time High In Feb.

CHICAGO—Combined capacity of air conditioning systems sold in Chicago during February reached the highest mark in history, according to figures reported by Commonwealth Edison Co.

Aggregate capacity of the 21 central-plant air conditioning installations contracted for in February was 5,392 hp., compared with 20 systems totaling 1,608 hp. in the same month last year. In the previous record month of March, 1937, 44 installations, rated at 2,157 hp., were sold.

Largest of February's contracts was for the three giant 1,250-hp. refrigeration machines to supply controlled temperature and humidity in the plant now being erected by the Studebaker Corp. at Archer and Cicero Aves. for the production of airplane engine parts. High-intensity fluorescent lighting will be used extensively, and the three buildings will be windowless.

Last month's air conditioning contracts were divided as follows:

General Offices	5
Industrial Plants	3
Restaurants	3
Candy Stores	2
Clothing Stores	2
Theaters	2
Funeral Parlor	1
Department Store	1
Shoe Store	1
Bowling Alley	1

Total ..... 21  
In addition to these central-plant air conditioning systems, Chicago dealers sold 13 electric room coolers. This is the same number reported for February, 1940.

## How One Distributor Is Making Plans To Sell Room Coolers This Year

Dealers Will Be Taught To 'Forget About the Engineering, Sell the Health Factors'

COLUMBUS, Ohio—Keynoted by the convenience of "plug-in" installation and concentrated on the residential market, an intensive packaged air conditioner sales campaign will be launched this spring by American Sales Co., Westinghouse air conditioning, commercial refrigeration, and major appliance distributor in 28 Ohio counties.

The program also will be aimed at breaking down the common conception that comfort cooling is extremely costly, and will stress the value of these eight "health factors" inherent in air conditioning: cooling, dehumidifying, between season heating, fresh outdoor air, clean filtered air, expulsion of stale air, draftless circulation, and exclusion of street noises.

The spring sales drive will be touched off by a carefully timed schedule of educational events designed to provide training for dealers and their salesmen. The new Westinghouse line, priced from \$149.50, already has been shown to the American Sales organization by a factory representative. The distributor salesmen are now engaged in stimulating dealer interest in a meeting scheduled to be held later this month.

tor are used very extensively, occasionally supplemented by remarks from a staff man.

More elaborate one and two-day clinics for dealer's salesmen are scheduled from time to time at the distributor's headquarters.

### COOPERATIVE PROMOTION

A large scale campaign of advertising and promotional work is carried on throughout the year. The package conditioner drive will occupy a major place during the spring and summer months. A cooperative factory-distributor-dealer fund for advertising is maintained which may be utilized by the dealer for approved newspaper, direct mail, and some other media.

American Sales Co. furnishes cuts, mats, and madeup proofs of newspaper copy for space ranging from 150 to 500 lines designed for local insertion. Full color folders, broadsides, and pamphlets are also available.

Allotments from the cooperative fund to the individual dealership are based on several factors, the most important of which is area potential.

H. L. Scott, manager of American Sales Co.'s commercial division, which includes air conditioning, believes that many package conditioner sales are due primarily to good window and store displays. Many are of the "impulsive" type which result when someone gets disgusted with the weather on a hot day and decides to do something about it. This is the type of prospect who is in the mood for a purchase and sees a window or floor showing and buys with little negotiation.

Best leads on conditioners, coolers, water fountains, and commercial refrigeration, it has been found, are inquiries that come to the store by telephone. The bulk of these originate from the firm's advertisement in the classified section, which the distributorship has concluded is the best and most resultful advertising medium.

### DEALERS ARE 'SCOUTS'

Virtually no cold canvassing is done. Next to telephone leads, the best source of contacts is through the dealerships. Few conclude sales themselves on the commercial class of business, but they act as scouts and furnish the distributorship with leads which its salesmen follow up.

The men investigate requirements, credit, likelihood of sale, and the strength of the dealer's influence. If these factors are favorable and the closing outlook good then Mr. Scott or George Brecht of the company's Dayton office go out and close the deal.

So successful has been this method of checking carefully on the correct adaption and usage of equipment that not one record of inadequate results has been filed.

Extensive development of dealerships has been a feature of American Sales Co.'s merchandising policy. At present the company serves some 200 retailers, of which 125 handle commercial and air conditioning business.

Best outlet for package conditioners has proved to be the F. & R. Lazarus Co. of Columbus.

By concentrating on residential prospects, Mr. Scott and his organization are laying an exceptional groundwork for the time when the conditioner will be a standard home appliance. When this day of acceptance for packaged air conditioning arrives, American Sales Co. will be in an advantageous position to do the same comprehensive selling job on this line which they now do on other Westinghouse appliances.

## Porcelain Institute To Meet April 17 at French Lick

FRENCH LICK SPRINGS, Ind.—Coming changes in the design of household kitchen equipment will be forecast by Miss Frances Weedman, consulting home economist of Chicago, at the tenth annual meeting of Porcelain Enamel Institute at French Lick Springs hotel April 17 and 18.

# AMAZING NEW RETAIL BUSINESS

with high unit of sale and big dollar profit!

Single-Unit Air Conditioning . . . the new, great, big-profit retail appliance business . . . growing faster every day! Easy-to-handle package merchandise . . . quick installation . . . no plumbing . . . no wiring. No technical problems. No trade-ins . . . FULL PROFITS!

## PHILCO-YORK SINGLE-UNIT AIR CONDITIONERS

### Lead the World in Sales!

In a short space of time Philco-York has become the world's *biggest-selling* Single-Unit Air Conditioner. Nearly ONE-HALF of all the Single-Unit Air Conditioners sold last year were Philco-York Units!

### And for 1941, An Even More Saleable Line

New improvements, greater efficiency, new beauty . . . at prices below the average of the industry in every bracket! And a tremendous market is open to you . . . every home and office . . . hotels . . . hospitals. Quick, easy sales, with plenty of repeats! Philco-York will pull inquiries from this market with a gigantic direct mail campaign and ads in the leading professional magazines . . . sales-producing leads that will be sent to you! And there are beautiful window displays, banners, streamers, electric signs and colorful literature for your store! Don't wait . . . see your Philco-York Distributor or mail coupon now!

MAIL COUPON NOW!

- No Saturation
- No Trade-ins
- No Expert Service



## NOW—Real, Complete, Efficient Single-Unit Air Conditioning at a Price the Public Can Pay!

Model 76-A (Illustrated)

- Cools and Conditions Room Air.
- Dehumidifies. Moisture is wrung out of the air, leaving it cool, dry, stimulating.
- Draws in Fresh, Outside Air.
- Filters Out Dirt, Dust and Pollen. A boon to hay fever sufferers!
- Circulates the Air.
- Shuts Out Street Noises.
- Removes Stale, Stuffy Inside Air.
- Gives Pure Air All Year 'Round.

There's a Philco-York Air Conditioner for Every Size Room, Priced as Low as . . .

**\$129<sup>50</sup>**

PHILCO, Air Conditioning Dept. 561  
Tioga and C Streets, Philadelphia, Pa.

Please send me full details of your dealer franchise proposition on Philco-York Air Conditioners, together with Discounts and Special Wholesale Credit Terms. Also send big, new Illustrated Booklet.

NAME \_\_\_\_\_  
STREET \_\_\_\_\_ COUNTY \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_



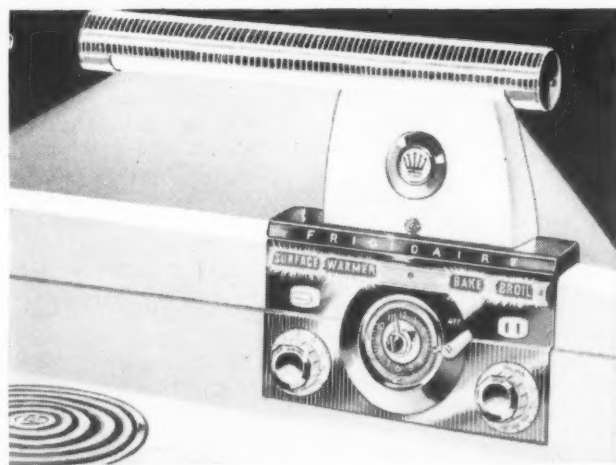
# Leadership in Action



• **SPECTACULAR** new Radiantube Cooking Units, a feature of every 1941 Frigidaire Range, give the customer faster cooking at less cost! Designed and manufactured by Frigidaire. These better units win many sales. **ONLY FRIGIDAIRE HAS THEM!**



• **BIG, THRIFTY** Even-Heat Oven, a feature of every Frigidaire Range, is said by many to be the industry's finest. Offers exclusive combination of advanced cooking features that win many sales. **ONLY FRIGIDAIRE HAS IT!**



• **ULTRA-MODERN** is the de luxe B-60 with exclusive fluorescent lighting and latest automatic controls. Even the lowest priced models offer advanced styling, advanced features, and every basic Frigidaire cooking advantage. These are the "extras" that make sales easier!



FRIGIDAIRE ELECTRIC REFRIGERATORS  
RANGES AND WATER HEATERS



De Luxe Model B-60, with ultra-modern fluorescent lighting and many other advanced features found in no other range.

## The Range that dares to be different

The principles of leadership do not vary.

The fundamentals that make for success in one business, usually make for success in a similar endeavor.

In few words, giving the customer greater value for his money leads to ever increasing sales and dealer profits. This is the basic principle of Frigidaire operation.

There's no skimping. Frigidaire Ranges in every price class are built to give more value. The same basic advantages are offered by all. Every model is distinguished by newest styling, the most advanced features, and utmost quality, inside and out.

That's why more than 100,000 Frigidaire Electric Ranges have been sold in very short time. That's why Frigidaire Electric Ranges are on their way up . . . and fast!

Powered by the driving force of Leadership in Action!

# Frigidaire

Made only by General Motors

FRIGIDAIRE DIVISION • GENERAL MOTORS SALES CORPORATION • DAYTON, OHIO



## New Philco 'Air Speed' Control Alters Dehumidifying Ratio In Room Units

(Concluded from Page 1, Column 4)  
Herr placed considerable emphasis on the re-designed ½-ton window-type unit, now known as the Model 61-A, priced at \$199.50 retail. The B.t.u. cooling capacity of this unit is unchanged at 5,750, but the amount of fresh air that may be brought into the room has been increased 40% to 210 c.f.m. The exhaust capacity is 150 c.f.m.

Purpose of increasing the fresh air supply is to draw air in from outdoors, and not from other offices in the same building.

An "air speed" control, consisting of two fan speeds, will be used on all room cooler models in the Philco line except the ½-hp. unit. Explaining the action of the new control Mr. Herr said:

"When the control is changed from fast to slow, we reduce the velocity of air coming into the room from the unit. This lower velocity is in itself an important feature, because it not only reduces the possibility of drafts, but also when the control is set on low velocity the air noise is less.

### VALUE OF 'SLOW' POSITION

"However, this control performs another valuable function. On days when the humidity is very high, but the temperature is not excessive, the control should be set on the "slow" position. This means that the air is moved at a lower velocity across the evaporator coils in the unit. Since the air is moved at a slower speed, it is in contact with the coils for a longer period of time, and more of the moisture is removed from the air by the coils. The drop in temperature in the room will not be quite as great when the control is in the "slow" position, but the removal of moisture will be at a maximum. This means more comfort for the user," Mr. Herr said.

Purpose of the two speed air control is to increase the dehumidifying capacity of the unit, and at the same time decrease the cooling capacity of the machine, when it is operating on the "slow" speed.

Conditioned air entering the room from Philco room coolers is controlled from the center grille. By a directional flow arrangement, the air may be directed gradually from a horizontal flow, to a position that is almost vertical. Thus the air may be deflected upward from the face of the unit, avoiding drafts for a person seated near the outlet grille.

Controls for regulating the amount of fresh air and exhaust air are on the front, above the top louvers of the grille.

### AIR TIGHT SEALING

Another feature of the new Philco conditioners is that they have been made 100% air tight when not in operation. The units can be placed in the windows of high buildings subjected to outside wind pressure, without having air leak through.

The conditioners have been equipped with rubber sealing and weather-stripping, to eliminate this difficult problem.

Owners of the new Philco window-type, and console type units will find it possible to change air filters without having a service call. The new models have wood cabinets, which may be lifted up to slide forward, thus exposing the filter to view. No tools of any kind are necessary to do this, and the window does not have to be raised, as all of the wood cabinet is inside the window.

Filters used on the new Philco units are honeycomb, wax impregnated parchment, rather than the glass wool used in former years. They are of a uniform size, making them interchangeable on the window and console models.

Centrifugal fans are used in place of the blade fan employed on former models, making it possible to handle more air against greater resistance, and with less air noise.

The new ¾-hp. window model has exactly the same dimensions as the ½-hp. window model, but has approximately 50% greater capacity. A 3 cylinder compressor is used, having a 1¼-inch bore and ¾-inch stroke. The unit handles 275 c.f.m. of fresh air, and will exhaust 150 c.f.m. Direction of air is controlled from horizontal to vertical, as in the smaller model.

### NOISE REDUCTION

Noise has been reduced on the window models, Mr. Herr said, first by the use of centrifugal fans, secondly by the application of more acoustical materials, and third by effecting a better balance of the unit on the window sill.

Application of centrifugal blower fans to the window type conditioners makes possible the use of a new sheet metal hood over the outside air entrance to the machines. This hood is equipped with a screen to keep out flies, mosquitos, and other insects. Another purpose of this device is to reduce noise from the units, which has been known to travel across apartment courts and annoy the neighbors.

The new Philco console type ¾-hp. room coolers also have wood cabinets, styled to conform with the decorative scheme of the finest interior. In appearance the consoles resemble a fine radio. They are equipped with dual air speeds, an air deflection control, and are said to be extremely quiet in operation.

Both air and water cooled models will sell for \$375.

Model 91-A has a B.t.u. capacity of 9,100 and the water cooled model will handle 10,000 B.t.u. The amount of fresh air supply has been increased from 140 c.f.m. to 330 c.f.m., and the units will exhaust 300 c.f.m. This air handling capacity makes it possible to change the air in the room in a relatively short time.

Filters are removable without the use of tools, as in the window-type models.

For certain large buildings, particularly in New York and Chicago, where union window cleaners have restrictions against having a duct fastened to the window, a hinged duct that can be swung back from the window has been made available with console models.

Console models are supplied with an instruction tag, which may be removed from the top of the cabinet, or left in place by the customer.

The Philco window ventilator, priced at \$39.50, has a wood cabinet constructed to resist outside weather conditions. Mr. Herr stated that this unit was selling rapidly, and that the company expected it would pave the way for many unit air conditioner sales. No change in the model was announced.

## 160,000 Telegrams To Hit 'Hot' Prospects

CHICAGO—One hundred and sixty thousand telegrams will be sent to a selected list of Philco room cooler prospects the day the thermometer hits 88° F. in the city where the prospect lives, as part of the Philco air conditioning promotion plan for 1941. Each telegram, delivered by Western Union offices throughout the country, will carry a business reply card.

This flood of hot-weather telegrams, designed to reach prospects for Philco room coolers when they are in a buying mood, forms the keystone of a far reaching and elaborate promotion program outlined by Philco executives at a series of meetings in key cities. Devoted largely to Philco's new line of room coolers, the one-day sessions also covered household refrigeration and radios. Speakers were introduced by T. A. Kennally, general sales manager.

Letters will be sent to 10,700 hotel directors, and these will be followed by 10,700 telegrams when hot weather breaks. The same promotion will be addressed to 7,500 hospitals and 5,300 tourist camps, or motels.

On April 28 300,000 letters will go out to doctors, dentists, lawyers, and business executives in all parts of the country. These will be followed by the 160,000 telegrams already mentioned here.

### \$214 AVERAGE PRICE

"Public acceptance of air conditioning is growing and our dealer structure is improving," declared Mr. Brown. "Our average sale last year was \$214 per room cooler, and there is no trade-in problem. The merchandise does not become obsolete from season to season."

According to Mr. Brown, Philco did 50% of the room cooler business in 1940.

Mr. Brown also cheered distributors by quoting a weather expert to the effect that a "long, hot, dry summer can be expected."

## Motion Picture Consent Decree May Boom Movie Air Cooling

By Cecil Sansbury

*Editor's Note:* Mr. Sansbury writes for the business trade press of the theatrical field, but the editors believe that this discussion of a possible "forcing" of non air conditioned theaters to get some sort of air cooling will be of considerable interest to air conditioning dealer-contractors.

In a forthcoming issue of the News there will be published a description of a "new" and "different" method of theater air conditioning.

On Feb. 1 the government-approved Consent Decree of the motion picture industry became operative. Actually a Code of Ethics for more equitable relations between distributors of pictures and exhibitors, the Decree contains a most important proviso, namely: The establishment of courts of arbitration to settle disputes between the two interested parties.

Few, if any, in the air conditioning field realize what the Consent Decree may mean to them. Strange as it sounds, it should result in increased revenue to more alert selling organizations! By this Decree "house appeal" and operating efficiency become practically a condition of the contract made between the distributor and theater owner; for the first time in the history of the motion picture industry there exists a legal right to discriminate because of physical characteristics of theaters.

In the sections of the Decree pertaining to arbitration this is expounded in none-too-subtle wordage. Although actually incidental to the text, the references are nevertheless specific. In Section VI we find "... If the exhibitor can satisfy reasonable minimum standards of theater operation." Section VIII says, in part, "The character and location of the theaters involved, including size, type of entertainment, appointments. . . ." And again in Section X, "... the character, appearance, and condition of each, including its furnishings and conveniences. . . ."

### PRODUCERS CHECK PROPERTIES

All indications within the trade point to the five major companies now abiding by the Decree making the physical condition of theaters definite issues in the cases of arbitration. The largest company involved, Metro-Goldwyn-Mayer, is now compiling pictorial data on every theater in the United States, these photographs to show in detail exteriors and interiors.

Commenting on possible developments in the immediate future, Ben Shylen, publisher of Boxoffice, one of the leading trade journals, had this to say: "(The Decree) means that scores, even hundreds, of theaters in various areas and several hundred for the country as a whole are going to be forced to make improvements, to modernize, to freshen up. If they do not they may be refused product."

There can be no argument to this statement: Modern air conditioning is absolutely essential to successful theater operation today. Yet a casual check of theaters in your particular locale will no doubt reveal that less than a third of the houses are actually air conditioned. It seems only logical to assume that by "physical characteristics" one must take air conditioning into account.

Hence, the assertion that the Decree will open the way for many sales can be taken as the conclusion formed from such a line of reasoning. And with this thought in mind the material contained herein is presented. The writer is in no sense an authority on air conditioning for theaters; the views are merely of the situation as seen through the eyes of a theatrical reporter.

### RE-NAME 'AIR CONDITIONING'?

Someone would do both industries a great favor if he were to dream up a name to replace "air conditioning." Even as all natural color motion pictures are incorrectly referred to as being in Technicolor by the average person, so are all theater cooling jobs "air conditioning." And in many cases, yes, a majority even, nothing could be more removed from the truth.

Every known cooling method, from a small electric fan in a honky-tonk to 50-ton Westinghouse units in

America's largest theaters, is exploited in the same manner by exhibitors. A visit to a theater utilizing the most primitive sort of cooling devices, followed by one to Radio City Music Hall, for example, would prove conclusively that there is a great difference.

However, such selling is at the best hit-and-miss, the real necessity being a national campaign to educate the public on the facts, materially helping the air conditioning industry, and at the same time by inference giving a break to the exhibitor who has spent several thousand dollars to get the McCoy.

Too many dissatisfied owners have found to their sorrow that the fellow down the street is sharing the gravy without investing large sums—if he had but hired a colored boy to wave a paper fan it would constitute "air conditioning!" Of course in the case of regular patronage this might not be possible, but in the case of transient trade (and many theaters survive because of it) who can tell without buying a ticket whether the inviting marquee banner is misrepresenting the real status inside.

### MISUSE OF TERM

If you want to sell expensive installations it will be necessary to convince each individual exhibitor that the equipment is something he cannot afford to be without. And to do this you must first acquaint the public with the wide variance of comforts from various systems, that the term "air conditioning" is too frequently misused. Thus given the proper incentive the theater will take over the ballyhoo, with the entire air conditioning industry deriving benefits.

Today it has been found that the exhibitor must be a showman as well; his success is partially due to the glamorous movies on the screen, and partially to the luxurious surroundings in which they are presented. Air conditioning plays an important part, yet it is one of the subconscious aids to additional enjoyment, hence it must remain in the background while beautiful decorations contribute a large share as visible agents of pleasure. For this reason theater air conditioning must always remain a complex problem, the engineers drawing their plans to conform with intricate designs. It would be foolish to suggest that a smart exhibitor sacrifice vital sections of a glamorous auditorium to air conditioning; he must be pampered to the extent the vents do not interfere with functional purposes.

### YEAR-AROUND JOBS

To the writer, and this expresses the sentiments of a large percentage of progressive theater owners, summer cooling alone is not enough. Air conditioning should be installed to operate on a year around basis, possibly by means of combination heating-cooling units. And the air, plenty of fresh air, would really be conditioned, cleansed by filters.

Potentially theaters have always been excellent prospects for air conditioning; under the Consent Decree the backward exhibitor will soon be definitely in the market. He will buy, but what he buys is problematical—inasmuch as "air conditioning" is many will install cheap inadequate systems.

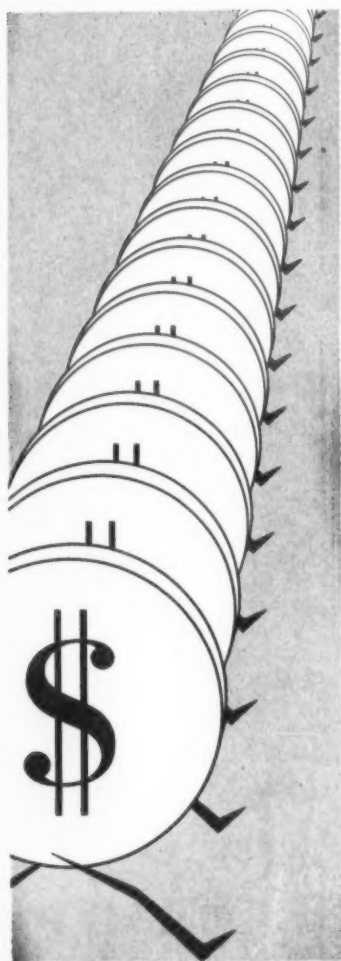
The air conditioning industry must sell him on the idea that such equipment is not desirable, being neither acceptable to discriminating patrons, nor to the courts of arbitration.

### 'Bill' Currie Heads Norge Club

DETROIT—W. L. "Bill" Currie has been re-elected president of the Norge Engineering Club for a full year's term. Other officers, elected at a dinner meeting March 28, included:

G. Brusco, vice president; F. Lemke, secretary and treasurer; H. H. Whittingham and D. T. Sickelsteel, directors.

Following the dinner and election of officers, the Norge engineers listened to a talk by George F. Taubeneck, editor and publisher of AIR CONDITIONING & REFRIGERATION NEWS.



### ARE YOU LETTING

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WHY pass up the huge volume of new business in the field of air-conditioning and refrigeration created by the National Defense program? BAKER equipment puts you in line to handle these new applications—gives you the important advantages of a complete range of sizes, adaptability to any requirements, high efficiency, and dependable, low-cost operation. Prepare now to get your share of this increased business. Write today for complete information on the BAKER franchise in your territory.

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**Kelvinator Refrigerator Sales to March 1st are up 101% over 1940. Selective Dealer Policy makes record sales possible with 8.4% fewer dealers**

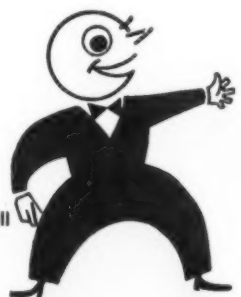
\*Just look at the record: Kelvinator Refrigerator Sales up 101% compared with an industry increase of only 39%!

When Kelvinator first talked about "selective distribution"

a year ago, it was not just an empty phrase. Kelvinator meant business...and the 101% sales increase with 8.4% fewer dealers is proof of the soundness of its Selective Dealer Policy.

These figures show what every refrigerator man knows—Kelvinator is definitely out in front. Dealer policy—product—prices—step-up sales program—everything is RIGHT!

Kelvinator Division Nash-Kelvinator Corp., Detroit, Mich.



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# Key Product Specifications for 1941 'Packaged' Air Conditioners

**Editor's Note:** Tabulations on this and several following pages present the main points of product information on the new models of "packaged" or unitary air conditioning equipment being offered in 1941.

All of the manufacturers were asked to submit prices and capacities, but not all complied, so this part of the information is not complete.

All of the equipment listed is strictly of the self-contained type (complete with refrigerating machine) except the McQuay floor type room cooler cabinets, which are without compressor.

## Airtemp Div., Chrysler Corp.

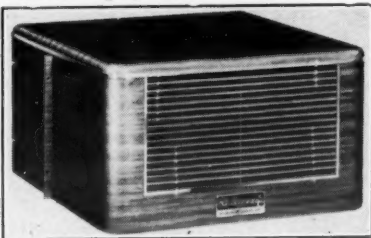
### Model WC-40 Window Type Room Cooler

**Dimensions:** 11½ inches high, 21 inches wide, and 23½ inches deep.  
**Functions:** Cooling, dehumidifying, and circulating.

**Cabinet:** Insulated steel construction, walnut grain finish with stainless steel trim.  
**Condensing Unit:** Airtemp 2-cylinder ½-hp. radial compressor, driven at 1,750 r.p.m.

**Blower:** 6-inch diameter single inlet single width multi-blade positive pressure type blower. Driven by compressor motor.  
**Air Circulation:** Continuous stainless steel grille at front provides for both supply and return air. Air delivery, 150 c.f.m.

**Cooling Surface:** Copper tube with continuous fins.  
**Capacity of Unit:** Not given.  
**Air Cleaning Medium:** None.  
**Suggested or List Price:** Not given.  
**Control Equipment:** Not given.



Airtemp window cooler model.

### Model FC-60 Floor Mounted Room Cooler

**Dimensions:** 34½ inches high, 31½ inches wide, and 18½ inches deep.  
**Functions:** Cooling, dehumidifying, circulating, and cleaning.

**Cabinet:** Steel cabinet, two-tone walnut finish with mahogany grain. "Telescope" design makes it suitable for various window heights.

**Condensing Unit:** Airtemp ½-hp. multi-cylinder radial type compressor, driven at 1,750 r.p.m.

**Blower:** Centrifugal blower driven by a ½-hp. motor.  
**Air Circulation:** Inclined supply grille with two-way directional flow control. Removable return grille at bottom of the cabinet. Air delivery, 200 c.f.m.

**Cooling Surface:** Copper tube with continuous fins.  
**Capacity of Unit:** Not given.  
**Air Cleaning Medium:** Throw-away type filter.

**Suggested or List Price:** Not given.  
**Control Equipment:** Manual Switch.

### Model FC-90 Floor Mounted Room Cooler

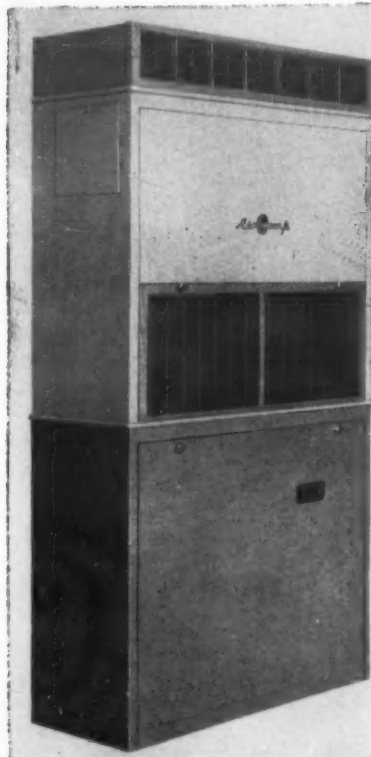
**Dimensions:** 38½ inches high, 36½ inches wide, and 18½ inches deep.  
**Functions:** Cooling, dehumidifying, circulating, and cleaning.

**Cabinet:** Steel cabinet, two-tone walnut finish with mahogany grain. "Telescope" design makes it suitable for various window heights.

**Condensing Unit:** Airtemp ¾-hp. multi-cylinder radial type compressor, driven at 1,750 r.p.m.

**Blower:** Two direct-driven centrifugal type blowers powered by a ¾-hp. motor.  
**Air Circulation:** Inclined supply grille with two-way directional flow control. Removable return grille at bottom of the cabinet. Air delivery, 300 c.f.m.

**Cooling Surface:** Copper tube with continuous fins.



Airtemp store air conditioner.

**Capacity of Unit:** Not given.  
**Air Cleaning Medium:** Throw-away type filter.  
**Suggested or List Price:** Not given.  
**Control Equipment:** Manual Switch.

### Model 3-SCB Store Conditioner

**Dimensions:** 89½ inches high, 32 inches wide, and 19½ inches deep.

**Functions:** Cooling, dehumidifying, circulating, cleaning. Heating and humidification optional.

**Cabinet:** Cabinet enclosure rigidly formed from heavy gauge sheet steel. Bonderized finish, chromium plated hardware.

**Condensing Unit:** Airtemp 3-cylinder 3-hp. radial compressor, driven at 1,750 r.p.m.

**Blower:** Centrifugal type fan mounted on a single shaft, driven at 1,750 r.p.m. by a ½-hp. motor.

**Air Circulation:** Discharge at top front, return grille at front center of cabinet. Air delivery, 1,200 c.f.m.

**Cooling Surface:** Copper tube with continuous fins.

**Heating Surface:** Extended surface, one-row steam heating copper coils.

**Humidifying Means:** Spray type humidifier.

**Capacity of Unit:** Not given.  
**Air Cleaning Medium:** Filter.

**Suggested or List Price:** Not given.  
**Control Equipment:** Thermostat for room temperature control, high pressure cut-out, automatic water regulating valve.

### Model 5-SCA Store Conditioner

**Dimensions:** 97½ inches high, 49 inches wide, and 19½ inches deep.

**Functions:** Cooling, dehumidifying, circulating, and cleaning. Heating and humidification optional.

**Cabinet:** Cabinet enclosure rigidly formed from heavy gauge sheet steel. Bonderized finish, chromium plated hardware.

**Condensing Unit:** Airtemp 5-cylinder 5-hp. radial compressor, driven at 1,750 r.p.m.

**Blower:** Two centrifugal type blowers, driven at 1,750 r.p.m. by ½-hp. motor.

**Air Circulation:** Discharge at top front, return grille at front center of cabinet. Air delivery, 2,000 c.f.m.

**Cooling Surface:** Copper tube with continuous fins.

**Heating Surface:** Extended surface, one-row steam heating copper coils.

**Humidifying Means:** Spray type humidifier.

**Capacity of Unit:** Not given.  
**Air Cleaning Medium:** Filter.

**Suggested or List Price:** Not given.  
**Control Equipment:** Thermostat for room temperature control, high pressure cut-out, automatic water regulating valve.

## General Refrigeration Corp.

### Model CR200W Store Cooler

**Dimensions:** 95½ inches high, 32½ inches wide, and 18½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, and circulating. Heating and humidifying optional.

**Cabinet:** Welded steel frame, walnut metallic enamel finish.

**Condensing Unit:** General Refrigeration 2-hp. 2-cylinder "Freon-12" compressor driven at 385 r.p.m. Thermostatic control.

**Blower:** Two centrifugal-type blowers, 7½ inches in diameter, driven by ¼-hp. motor.

**Air Circulation:** Air intake at front center, air discharge at front top through adjustable grilles. Fresh air intake. Room air circulation 600-1,000 c.f.m.

**Cooling Surface:** Copper fins on copper tubes.

**Capacity of Unit:** 28,000 B.t.u. at inlet air temperature of 80° F. dry bulb, 67° F. wet bulb.

**Air Cleaning Medium:** Double wool felt-type filter.

**Suggested or List Price:** Not given.  
**Control Equipment:** Three-position switch, adjustable thermostat.

### Model CR300W Store Cooler

**Dimensions:** 95½ inches high, 32½ inches wide, and 18½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, and circulating. Heating and humidifying optional.

**Cabinet:** Welded steel frame, walnut metallic enamel finish.

**Condensing Unit:** General Refrigeration 3-hp. 2-cylinder "Freon-12" compressor driven at 590 r.p.m. Thermostatic control.

**Blower:** Two centrifugal-type blowers, 7½ inches in diameter, driven by ¼-hp. motor.

**Air Circulation:** Air intake at front center, air discharge at front top through adjustable grilles. Fresh air intake. Room air circulation 800-1,500 c.f.m.

**Cooling Surface:** Copper fins on copper tubes.

**Capacity of Unit:** 37,000 B.t.u. at 80° F. dry bulb inlet air, 67° F. wet bulb.

**Air Cleaning Medium:** Double wool felt-type filter.

**Suggested or List Price:** Not given.  
**Control Equipment:** Three-position switch, adjustable thermostat.

### Model CR500W Store Cooler

**Dimensions:** 95½ inches high, 46½ inches wide, and 18½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, and circulating. Heating and humidifying optional.

**Cabinet:** Welded steel frame, walnut metallic enamel finish.

**Condensing Unit:** General Refrigeration 5-hp. 2-cylinder "Freon-12" compressor driven at 590 r.p.m. Thermostatic control.

**Blower:** Two centrifugal-type blowers, 7½ inches in diameter, driven by ¼-hp. motor.

**Air Circulation:** Air intake at front center, air discharge at front top through adjustable grilles. Fresh air intake. Room air circulation 1,200-2,000 c.f.m.

**Cooling Surface:** Copper fins on copper tubes.

**Capacity of Unit:** 58,000 B.t.u. at 80° F. dry bulb inlet air, 67° F. wet bulb.

**Air Cleaning Medium:** Double wool felt-type filter.

**Suggested or List Price:** Not given.  
**Control Equipment:** Three-position switch, adjustable thermostat.

**Cabinet:** Welded steel frame, walnut metallic enamel finish.

**Condensing Unit:** General Refrigeration 5-hp. 4-cylinder "Freon-12" compressor driven at 590 r.p.m. Thermostatic control.

**Blower:** Three centrifugal-type blowers, 7½ inches in diameter, driven by ½-hp. motor.

**Air Circulation:** Air intake at front center, air discharge at front top through adjustable grilles. Fresh air intake. Room air circulation 1,200-2,000 c.f.m.

**Cooling Surface:** Copper fins on copper tubes.

**Capacity of Unit:** 58,000 B.t.u. at 80° F. dry bulb inlet air, 67° F. wet bulb.

**Air Cleaning Medium:** Double wool felt-type filter.

**Suggested or List Price:** Not given.  
**Control Equipment:** Three-position switch, adjustable thermostat.

## Trane Co.

### Model 3-SC Store Conditioner

**Dimensions:** 83 inches high, 36½ inches wide, and 21½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, circulating, heating, humidifying.

**Cabinet:** Furniture steel cabinet with brown wrinkle enamel finish.

**Condensing Unit:** Trane 3-hp. "Freon-12" compressor.

**Blower:** Trane squirrel cage fans.

**Air Circulation:** Air discharge at top front, return grille at front center of cabinet.

**Cooling Surface:** Trane coils with dual contact fins.

**Heating Surface:** Trane heating coil.

**Humidifying Means:** Target type spray nozzles.

**Capacity of Unit:** Not given.  
**Air Cleaning Medium:** Filters.

**Suggested or List Price:** Not given.  
**Control Equipment:** Not given.

### Model 5-SC Store Conditioner

**Dimensions:** 86½ inches high, 49½ inches wide, and 24½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, circulating, heating, humidifying.

**Cabinet:** Furniture steel cabinet with brown wrinkle enamel finish.

**Condensing Unit:** Trane 5-hp. "Freon-12" compressor.

**Blower:** Trane squirrel cage fans.

**Air Circulation:** Air discharge at top front, return grille at front center of cabinet.

**Cooling Surface:** Trane coils with dual contact fins.

**Heating Surface:** Trane heating coil.

**Humidifying Means:** Target type spray nozzles.

**Capacity of Unit:** Not given.  
**Air Cleaning Medium:** Filters.

**Suggested or List Price:** Not given.  
**Control Equipment:** Not given.

### Model 7-SC for Application with Ductwork

**Dimensions:** 90½ inches high, 71½ inches wide, and 28 inches deep.

**Functions:** Cooling, dehumidifying, cleaning, circulating, heating, humidifying.

**Cabinet:** Furniture steel cabinet with enamel finish.

**Condensing Unit:** Trane 7½-hp. "Freon-12" compressor.

**Blower:** Trane blower fans.

**Air Circulation:** Air discharge at top front of cabinet, return opening at front center.

**Cooling Surface:** Trane coils with dual contact fins.

**Heating Surface:** Trane heating coil.

**Humidifying Means:** Target type spray nozzles.

**Capacity of Unit:** Not given.  
**Air Cleaning Medium:** Filters.

**Suggested or List Price:** Not given.  
**Control Equipment:** Not given.

## Gale Mountaineer

### Lake Louise C-50 Window Cooler

**Dimensions:** 13½ inches high, 23 inches wide, 23 inches deep. Extends into room 10½ inches.

**Functions:** Cooling, dehumidifying, circulating, ventilating, and cleaning.

**Cabinet:** Furniture steel, Bonderized against rust. ½ inch of acoustical insulation. Burled walnut grained finish inside room, Morocco brown for outdoors.

**Condensing Unit:** Gale Products 2-cylinder ½-hp. "Freon-12" compressor, 826 r.p.m.

**Blower:** ¼-hp. G-E motor drives propeller-type fan at 1,625 r.p.m.

**Air Circulation:** Air intake through evaporators at each end, discharged through front. Air delivery 260 c.f.m. Gale rotating grille; velocity at face 500 f.p.m. Fresh air drawn from outdoors constantly.

**Cooling Surface:** Two Bush copper fin and tube evaporators; 333 sq. ft. of cooling surface.

**Capacity of Unit:** Under conditions of 95° dry bulb, 75° wet bulb outdoors, and 80° dry bulb and 67° wet bulb indoors, unit has refrigerating effect of 5,400 B.t.u. When temperatures are higher, unit has a net cooling capacity up to 6,100 B.t.u.

**Air Cleaning Medium:** Copper wool, oil treated.

**Suggested List Price:** \$189.50—110V, 60C. AC.

**Control Equipment:** Thermostatic expansion valve, motor overload protection. Automatic pressure relief valve available at extra cost. Gale "weather control" and time switch also extra.

### Lake Placid G-5R Window Cooler

**Dimensions:** 14 inches high, 27 inches wide, 14½ inches deep. Extends into room 9 inches.

**Functions:** Cooling, dehumidifying, circulating, ventilating, cleaning.

**Cabinet:** Furniture steel, Bonderized against rust. ½ inch of acoustical insulation. Finished in Silver Taupe baked Dulux inside room and outside window.

**Condensing Unit:** Gale Products 2-cylinder ½-hp. methyl chloride compressor, 430 r.p.m.

**Blower:** ¼-hp. G-E motor drives propeller type fan at 1,550 r.p.m.

**Air Circulation:** Air intake through



Home comfort for any room in the house can be obtained with a window-type air conditioner like the "Lake Louise" model made by Gale Products, Co., shown in this illustration.

evaporator at left end of cabinet, discharge at front at 200 c.f.m. Gale rotating grille, velocity at face 400 f.p.m. Fresh air drawn from outdoors constantly.

**Cooling Surface:** Bush copper fin and tube evaporator; 217 sq. ft. of cooling surface.

**Capacity of Unit:** Under conditions of 95° dry bulb, 75° wet bulb outdoors, and 80° dry bulb and 67° wet bulb indoors, unit has a refrigerating effect of 3,950 B.t.u. When temperatures are higher, the unit has a net cooling capacity up to 4,700 B.t.u.

**Air Cleaning Medium:** Spun glass, washable.

**Suggested List Price:** \$149—110V, 60C. AC.

**Control Equipment:** Same as for C-50.

## Carrier Corp.

### Type 51C2 Window Cooler

**Dimensions:** 14½ inches high, 26 inches wide, and 26½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, and circulating.

**Cabinet:** 18 gauge steel cabinet, brown enamel mar-resisting finish.

**Condensing Unit:** Carrier ½-hp. "Freon-12" air conditioning compressor.

**Blower:** Three-blade propeller type fan driven by a ½-hp. motor.

**Air Circulation:** Adjustable air discharge from front, intake at side and rear. Air delivery, 230 c.f.m.

**Cooling Surface:** Plate fin type, copper fins.

**Capacity of Unit:** 5,700 B.t.u., based on outdoor temperatures of 95° dry bulb and 78° wet bulb and room temperatures of 80° dry bulb and 67° wet bulb with 45 c.f.m. of air taken from outdoors for ventilation.

**Air Cleaning Medium:** Replacement type viscous filter.

**Suggested or List Price:** Not given.  
**Control Equipment:** Three-position manual switch.

### Type 51B1 Floor Mounted Room Cooler

**Dimensions:** 40 inches high, 34 inches wide, and 17½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, and circulating.

**Cabinet:** Walnut cabinet, hand rubbed finish.

**Condensing Unit:** Carrier ½-hp. "Freon-12" air conditioning compressor.

**Blower:** Centrifugal type blowers driven by a ½-hp. motor.

**Air Circulation:** Adjustable air discharge on top of the cabinet, return grille at lower front. Air delivery, 330 c.f.m.

**Cooling Surface:** Copper plate fin type.

**Capacity of Unit:** 7,500 B.t.u., based on outdoor temperatures of 95° D.B. and 78° W.B. and room temperatures of 80° D.B. and 67° W.B. with 60 c.f.m. taken from outdoors for ventilation.

**Air Cleaning Medium:** Replacement type viscous filter.

**Suggested or List Price:** Not given.  
**Control Equipment:** Three-position switch.

### Type 51B2 Floor Mounted Room Cooler

**Dimensions:** 40 inches high, 34 inches wide, and 17½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, and circulating.

**Cabinet:** Walnut cabinet, hand rubbed finish, plastic inlet grille.

**Condensing Unit:** Carrier ¾-hp. "Freon-12" air conditioning compressor.

**Blower:** Centrifugal type blowers driven by a ¾-hp. motor.

**Air Circulation:** Adjustable air dis-

charge on top of the cabinet, return grille at lower front. Air delivery, 330 c.f.m.

**Cooling Surface:** Copper plate fin type.

**Capacity of Unit:** 9,300 B.t.u., based on outdoor temperatures of 95° D.B. and 78° W.B. and room temperatures of 80° D.B. and 67° W.B. with 60 c.f.m. taken from outdoors.

**Air Cleaning Medium:** Replacement type viscous filter.

**Suggested or List Price:** Not given.  
**Control Equipment:** Thermostat for temperature control. Sequence switch for operation.

### Type 51D2 Floor Mounted Room Cooler

**Dimensions:** 42½ inches high, 39 inches wide, and 23½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, and circulating.

**Cabinet:** Walnut cabinet, hand rubbed finish, plastic inlet grille.

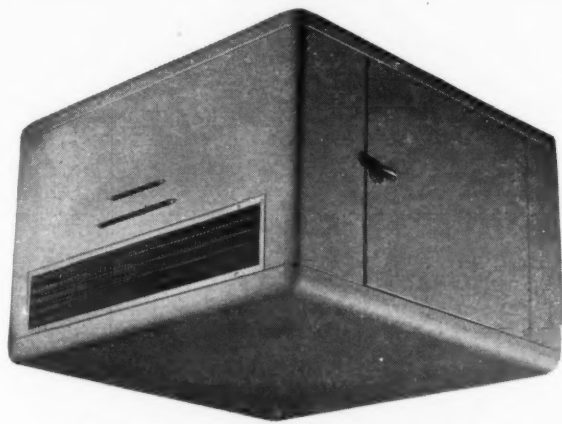
**Condensing Unit:</**



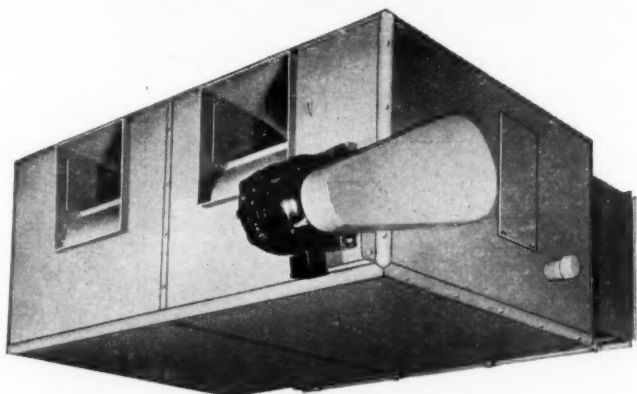
# SELL MILLS

# Air Perfectioning

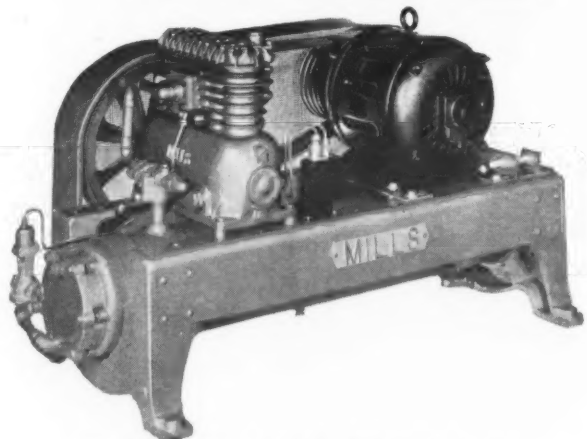
## QUIETEST, MOST EFFICIENT AIR CONDITIONING AND CONDENSING UNITS



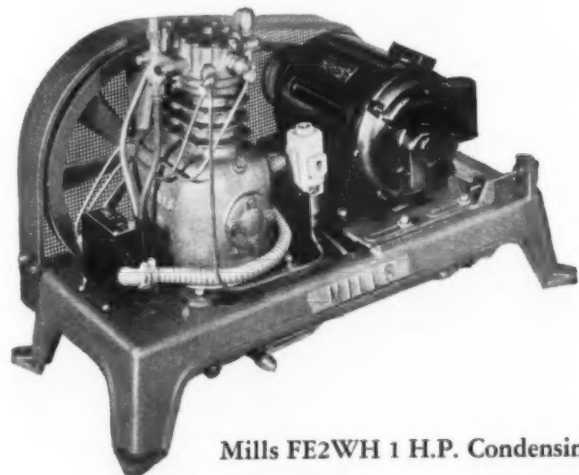
Mills 1, 2, 3, and 5 Ton Remote Air Perfectioner (Ceiling Mounted Model)



Mills 7 1/2 and 10 Ton Remote Air Perfectioner (Ceiling Mounted Model)



Mills FK9WH 10 H.P. Condensing Unit



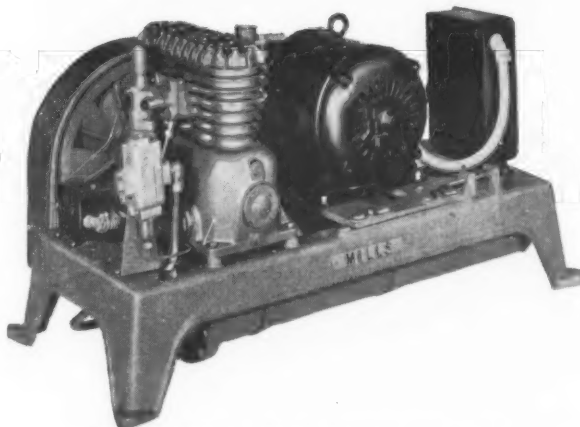
Mills FE2WH 1 H.P. Condensing Unit

**MILLS AIR PERFECTIONERS:** designed to meet the demands of correct air conditioning for stores, shops, restaurants, business and professional offices, etc. Six sizes—14,000 to 121,000 B.T.U. per hour cooling capacity.

**MILLS CONDENSING UNITS:** famous for their low operating cost and maintenance. They use less electric current and water, are quiet and smooth in operation, precision-built to last a lifetime. Mills Units for air conditioning application are now furnished in 1, 1 1/2, 2, 3, 5, 7 1/2 and 10 horse power models.

**THE NEW 10 HORSE POWER CONDENSING UNIT: (FK9WH)** is MILLS answer to the demand for a unit of this capacity for air-conditioning work. The compressor for this unit, type K9, has been developed explicitly for this class of installation and is the result of extensive research, careful engineering and testing by the House of Mills.

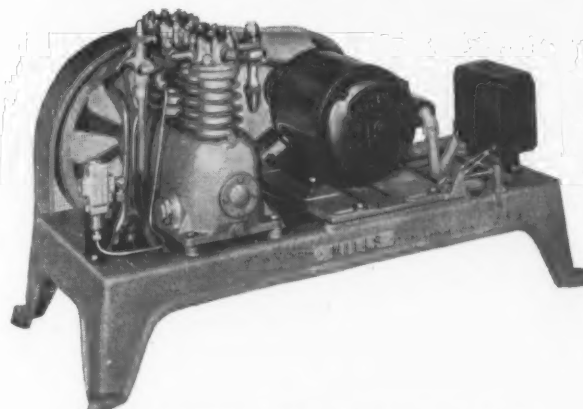
**ASK ABOUT OUR DEALER'S FINANCE PLAN**



Mills F17WH 5 H.P. Condensing Unit



Mills 7 1/2 and 10 Ton Self-Contained Air Perfectioner (Floor Model)



Mills FH4WH 3 H.P. Condensing Unit



It pays to handle Mills—sell Mills complete line. Matched equipment always gives the best results. Send today for our free catalogs.

### MAIL COUPON TODAY

Mills Novelty Company, Chicago, Ill.  
Gentlemen:

Without any obligation on my part, please send me your free refrigeration catalogs and air-conditioning data.

YOUR NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

TOWN \_\_\_\_\_ STATE \_\_\_\_\_



## SELF-CONTAINED AIR CONDITIONERS

## York Ice Machinery Corp.

## Yorkaire Model 225 Store Cooler

**Dimensions:** 72 inches high (with special top), 36 inches wide, 20 inches deep.  
**Functions:** Cooling, dehumidifying, cleaning, circulating. Heating and humidifying optional.  
**Cabinet:** Steel panels suspended on hooks, acoustically insulated, sepi satin finish.  
**Condensing Unit:** York 2-hp. "Freon-12" compressor.  
**Blower:** 4-blade, propeller-type, slow-speed fan.  
**Air Circulation:** Air intake at rear, air discharge at front or rear at top, or on top, through adjustable grille. Room air circulation 760 c.f.m.  
**Cooling Surface:** Copper fins on staggered copper tubes.  
**Capacity of Unit:** Not given.  
**Air Cleaning Medium:** Fiberglass filter.  
**Suggested or List Price:** Not given.  
**Control Equipment:** Thermostat, control switch, water regulator.

## Yorkaire Model 350 Store Cooler

**Dimensions:** 84 inches high (with special top), 42 inches wide, 21 inches deep.  
**Functions:** Cooling, dehumidifying, cleaning, circulating. Heating and humidifying optional.  
**Cabinet:** Same as Model 225.  
**Condensing Unit:** York 3-hp. "Freon-12" compressor.  
**Blower:** Adjustable diameter type.  
**Air Circulation:** Air intake at rear, air discharge at front or rear at top, or on top, through adjustable grille. Room air circulation 900 to 1,500 c.f.m.  
**Cooling Surface:** Same as Model 225.  
**Capacity of Unit:** Not given.  
**Air Cleaning Medium:** Fiberglass filter.  
**Suggested or List Price:** Not given.  
**Control Equipment:** Thermostat, control switch, water regulator.

## Model 550 Yorkaire Store Cooler

**Dimensions:** 85 inches high (with spe-

cial top), 42 inches wide, 21 inches deep.  
**Functions:** Cooling, dehumidifying, cleaning, and circulating. Heating and humidifying optional.  
**Cabinet:** Same as Model 225.  
**Condensing Unit:** York 5-hp. "Freon-12" compressor.  
**Blower:** Adjustable diameter type.  
**Air Circulation:** Air intake at rear, air discharge at front or rear at top, or on top, through adjustable grille. Room air circulation 1,200 to 2,200 c.f.m.  
**Cooling Surface:** Copper fins on staggered copper tubing.  
**Capacity of Unit:** Not given.  
**Air Cleaning Medium:** Fiberglass filter.  
**Suggested or List Price:** Not given.  
**Control Equipment:** Thermostat, control switch, and water regulator.

## Model 701 Yorkaire Self-Contained Central Type

**Dimensions:** 90 inches high, 55 inches wide, and 33 inches deep.  
**Functions:** Cooling, dehumidifying, cleaning, and circulating. Heating and humidification optional.  
**Cabinet:** Three section, metal panel construction.  
**Condensing Unit:** Two York 3-hp. "Freon-12" condensing units. Thermostatic control.  
**Air Circulation:** Air circulation through separate fan section at top by 1½-hp. blower, permitting air discharge in any amount or direction desired.  
**Cooling Surface:** Separate coil for each compressor.  
**Capacity of Unit:** Not given.  
**Air Cleaning Medium:** Filter.  
**Suggested or List Price:** Not given.  
**Control Equipment:** Dependent upon application.

## Models 1001 and 1501 Yorkaire Self-Contained Central Type

These models similar to Model 701, except that Model 1001 has two 5-hp. compressors, and Model 1501 has three 5-hp. compressors and a 3-hp. blower.

## Mills Novelty Co.

## Air Perfectioner—Floor Type Model APF750

**Dimensions:** 104½ inches high, 68½ inches wide, 31½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, circulating, heating, humidifying.

**Cabinet:** Sheet steel casing and special formed angle and channel iron framework, electro-galvanized throughout. Interior heat and sound insulated with moisture-proof and flame-proof insulating material. Durable maroon finish or prime coat gray lacquer finish.

**Condensing Unit:** Mills 7½-hp. 4-cylinder "Freon-12" compressor driven at 725 r.p.m.

**Blower:** Squirrel-cage type with forward curved blades. Two 14½-inch wheels driven at 796 r.p.m. by 1-hp. motor.

**Air Circulation:** Air delivery, 3,000 c.f.m.

**Cooling Surface:** Thermek surface with extended fins. Electro-tin plated.

**Heating Surface:** On application to meet conditions.

**Capacity of Unit:** Total room cooling effect, 94,000 B.t.u. per hour. Based on standard method of rating and testing air conditioning equipment as adopted by the A.S.R.E.

**Humidification:** Spray-type. Nine gallons of water per hour at 30-50 lbs. water pressure.

**Air Cleaning Medium:** Dust-stop throw-away type filters.

**List Price:** \$2,490 f.o.b. shipping factory.

**Control Equipment:** Multi-outlet thermal expansion valve, solenoid valve, cross-the-line starter, high and low pressure cut-outs.

**Air Perfectioner—Floor Type Model APF1000**

**Dimensions:** 10½ inches high, 68½ inches wide, 31½ inches deep.

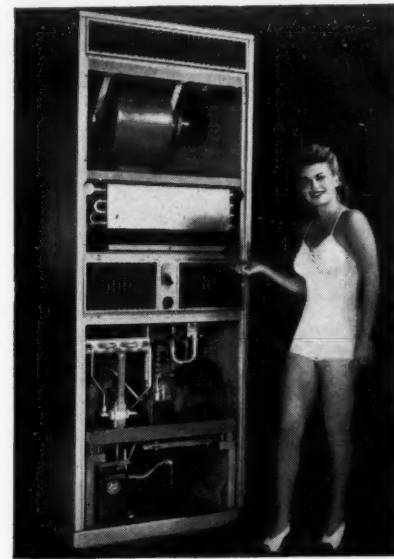
**Functions:** Cooling, dehumidifying, cleaning, circulating, heating, humidifying.

**Cabinet:** Same as Model APF750.

**Condensing Unit:** Mills 10-hp. 4-cylinder "Freon-12" compressor driven at 480 r.p.m.

**Blower:** Squirrel-cage type with forward curved blades. Two 14½-inch wheels driven at 798 r.p.m. by 1½-hp. motor.

**Air Circulation:** Air delivery, 4,000 c.f.m.



"Lid off" view of a Mills store air conditioner, showing working parts.

**Cooling Surface:** Thermek surface with extended fins. Electro-tin plated.

**Heating Surface:** On application to meet conditions.

**Capacity of Unit:** Total room cooling effect, 121,000 B.t.u. per hour. Based on standard method of rating and testing air conditioning equipment as adopted by the A.S.R.E.

**Humidification:** Same as Model APF750.

**Air Cleaning Medium:** Dust-stop throw-away-type filters.

**Suggested or List Price:** \$2,940 f.o.b. shipping factory.

**Control Equipment:** Same as Model APF750.

## Westinghouse Electric &amp; Mfg. Co.

## Model WA-04 "Mobilaire"—Room Cooler

**Dimensions:** 13½ inches high, 26½ inches wide, and 23½ inches deep.

**Functions:** Cooling, cleaning, dehumidifying, and circulating.

**Cabinet:** Wood, walnut veneer.

**Condensing Unit:** Westinghouse ½-hp., 2-cylinder "Freon-12" compressor, 1,725 r.p.m.

**Blower:** Propeller type, 9½ inches in diameter, driven at 1,140 r.p.m. by ½-hp. motor.

**Air Circulation:** Air intake at front, air discharge at front through wood louvers. Outside air intake through damper. Air delivery: 140 c.f.m.

**Cooling Surface:** Plate fin and tube. Tinned copper tubes.

**Capacity:** Not given.

**Air Cleaning Medium:** Viscous paper filter.

**Suggested or List Price:** Not given.

**Control Equipment:** Thermostat optional at extra cost.

## Model WB-06 "Mobilaire"—Room Cooler

**Dimensions:** 15½ inches high, 27½ inches wide, and 24½ inches deep.

**Functions:** Cooling, cleaning, dehumidifying, and circulating.

**Cabinet:** Same as Model WA-04.

**Condensing Unit:** Westinghouse ½-hp., 2-cylinder "Freon-12" compressor, 1,725 r.p.m.

**Blower:** Centrifugal type, 6 inches in diameter, driven at 1,140 r.p.m. by ½-hp. motor.

**Air Circulation:** Air intake at front, air discharge at top through metal bars. Fresh air intake through damper. Air delivered: 200 c.f.m.

**Cooling Surface:** Same as Model WA-04.

**Capacity of Unit:** Not given.

**Air Cleaning Medium:** Viscous glass filter.

**Suggested or List Price:** Not given.

**Control Equipment:** Same as Model WA-04.

## Model WB-06-R "Mobilaire"—Room Cooler

**Dimensions:** 15½ inches high, 27½ inches wide, and 24½ inches deep.

**Functions:** Cooling, cleaning, dehumidifying, circulating, and heating.

**Cabinet:** Same as Model WA-04.

**Condensing Unit:** Westinghouse ½-hp., 2-cylinder "Freon-12" compressor, 1,725 r.p.m.

**Blower:** Same as Model WB-06.

**Air Circulation:** Same as Model WB-06.

**Cooling Surface:** Same as Model WA-04.

**Heating Surface:** Plate fin and tube. Tinned copper tubes. Heats by reverse cycle refrigeration, by turning control knob.

**Capacity of Unit:** Not given.

**Air Cleaning Medium:** Viscous glass filter.

**Suggested or List Price:** Not given.

**Control Equipment:** Same as Model WA-04.

## Model CU-45 "Unitaire"—Store Cooler

**Dimensions:** 26 inches high, 38 inches wide, and 24 inches deep.

**Functions:** Cooling, cleaning, dehumidifying, circulating. Heating optional at extra cost.

**Cabinet:** Welded steel. Finished in brown crinkled paint. One-inch blanket insulation.

**Condensing Unit:** Westinghouse 1-hp., 1-cylinder "Freon-12" compressor, 1,160 r.p.m.

**Blower:** Centrifugal type, 8½ inches in diameter, driven at 700 r.p.m. by ½-hp. motor.

**Air Circulation:** Air intake at front, air discharge at front through adjustable bars. Fresh air intake through duct flange optional at extra cost. Air delivery: 500 c.f.m.

**Cooling Surface:** Plate fin and tube. Tinned copper tubes.

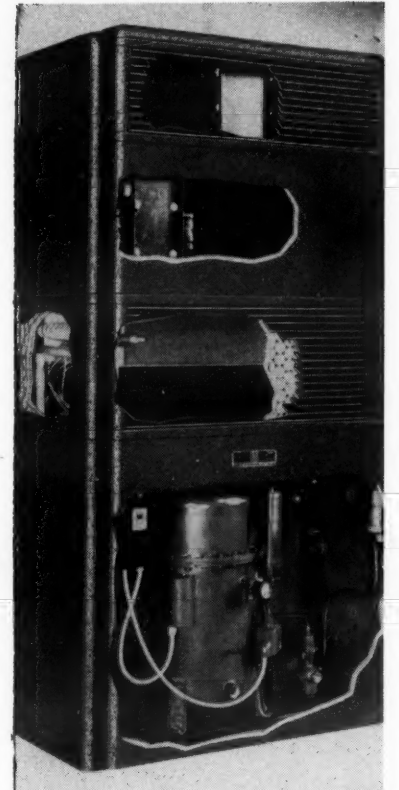
**Heating Surface:** Plate fin and tube. Tinned copper tubes.

**Capacity of Unit:** Not given.

**Air Cleaning Medium:** Viscous glass filter.

**Suggested or List Price:** Not given.

**Control Equipment:** Thermostat optional at extra cost. Water regulating valve.



Cutaway view of Westinghouse model SU-50 store conditioner.

## Model SU-20 "Unitaire"—Store Cooler

**Dimensions:** 45½ inches high, 36½ inches wide, and 24½ inches deep.

**Functions:** Cooling, cleaning, dehumidifying, circulating. Heating and humidifying optional at extra cost.

**Cabinet:** Welded steel. Finished in brown hammered paint. One-inch blanket insulation.

**Condensing Unit:** Two Westinghouse 1-hp., 1-cylinder "Freon-12" compressors, 1,160 r.p.m.

**Blower:** Centrifugal type, 9½ inches in diameter, driven at 800-1,100 r.p.m. by ½-hp. motor.

**Air Circulation:** Air intake at front, air discharge at front or top through adjustable bars. Fresh air intake through duct flange optional at extra cost.

**Cooling Surface:** Same as Model CU-45.

**Heating Surface:** Same as Model CU-45.

**Capacity of Unit:** Not given.

**Humidification:** Atomizing spray.

**Air Cleaning Medium:** Same as Model CU-45.

**Suggested or List Price:** Not given.

**Control Equipment:** Thermostat, water regulating valve. Humidistat optional at extra cost.

## Model SU-30 "Unitaire"—Store Cooler

**Dimensions:** 59½ inches high, 40½ inches wide, and 24½ inches deep.

**Functions:** Cooling, cleaning, dehumidifying, circulating. Heating and humidifying optional at extra cost.

**Cabinet:** Same as Model SU-20.

**Condensing Unit:** Two Westinghouse 1½-hp., 1-cylinder "Freon-12" compressors, 1,750 r.p.m.

**Blower:** Centrifugal type, two 9½ inches in diameter, driven at 770-1,000 r.p.m. by ½-hp. motor.

**Air Circulation:** Air intake at front, air discharge at front or top through adjustable bars. Fresh air intake through duct flange optional at extra cost. Air delivery: 1,750 c.f.m.

**Cooling Surface:** Same as CU-45.

**Heating Surface:** Same as CU-45.

**Capacity of Unit:** Not given.

**Humidification:** Same as SU-20.

**Air Cleaning Medium:** Same as CU-45.

**Suggested or List Price:** Not given.

**Control Equipment:** Same as SU-20.

## Model SU-50 "Unitaire"—Store Cooler

**Dimensions:** 92½ inches high, 46½ inches wide, and 23½ inches deep.

**Functions:** Cooling, cleaning, dehumidifying, and circulating. Heating and humidification optional at extra cost.

**Cabinet:** Same as SU-20.

**Condensing Unit:** Westinghouse 5-hp., 4-cylinder "Freon-12" compressor, 1,150 r.p.m.

**Blower:** Centrifugal type, two 11½ inches in diameter, driven at 690-835 r.p.m. by ¾-hp. motor.

**Air Circulation:** Air intake at front and side, air discharge at front through adjustable bars. Fresh air intake through duct flange optional at extra cost. Air delivery: 2,750 c.f.m.

**Cooling Surface:** Same as Model CU-45.

**Heating Surface:** Same as Model CU-45.

**Capacity:** Not given.

**Humidification:** Same as Model SU-20.

**Air Cleaning Medium:** Same as Model CU-45.

**Suggested or List Price:** Not given.

**Control Equipment:** Same as Model SU-20.

HERE'S ONLY **ONE** OF THE  
MANY MARKETS YOU CAN SELL  
with CURTIS  
PACKAGED AIR CONDITIONING

In 1940 Air Conditioning  
Increased Drug Store Sales  
by 24.3%! (Drug Topics)

● Last year, drug stores alone spent a total of over two and a half million dollars for air conditioning equipment. And according to a survey conducted by Drug Topics magazine, these air conditioning installations resulted in an average sales increase of 24.3% per store.

This is only part of the tremendous market wide open to dealers selling Curtis Packaged Air Conditioning Units—ideal not only for drug stores but all retail store applications.

Air conditioning definitely increases retail sales volume and profits.

Right now is the time to capture the retail summer cooling market in your community. You can do it with the complete Curtis line of Packaged Units. Write today for full details of the Curtis dealership plan.

## CURTIS REFRIGERATING MACHINE CO.

1912 Kienlen Ave. - St. Louis, Mo.

Established 1854



Division of Curtis Manufacturing Co.

CURTIS Packaged  
Air Conditioning  
Units Offer:—

- ★ Wide range of sizes including 3, 5, 7½, 10, and 15 H. P. models
- ★ Adaptability for heating
- ★ Modern, streamlined appearance
- ★ Ease of installation
- ★ Trouble-free performance
- ★ Lowest cost operation



## Iceman Who Blocked Defense Housing Bill Did Dealers a Good Turn

(Concluded from Page 1)

Robert S. Allen, came about because one Mississippi iceman had a "mad on." Said the columnists:

"WASHINGTON—Much has been said about certain big industrial and labor elements obstructing the defense program for their private gain. But theirs is no monopoly. Various others not in the public eye also are throwing "me first" monkey-wrenches into the defense machinery.

"An amazing such instance that escaped general attention occurred in the House of Representatives on the appropriation of \$150,000,000 for defense housing.

"Prompt enactment of this bill was of the utmost urgency. With hundreds of thousands of defense workers packed into overcrowded, makeshift quarters, the problem of housing them is acute in the extreme, and Roosevelt personally had asked for the \$150,000,000 bill to rush completion of numerous projects.

"The House Appropriations Committee quickly approved the measure and shot it to the Rules Committee for a rule to place it before the House for immediate action. But in the Rules Committee this emergency bill struck a mysterious snag.

"Something stalled it for 10 days, while Army, Navy, and Defense officials tore their hair in helpless rage; and while legions of defense workers and their families shivered in unsanitary shelters. The story behind this delay borders on the fantastic.

"MIGHTY ICEMAN—A Pascagoula, Miss. iceman was the cause of it all. His name is H. F. Gautier and he plus his Congressman, William M. Colmer, were able to block the urgent bill affecting scores of communities and thousands of men.

"The story goes back several months, when the Navy began buying land in Pascagoula to erect a housing project for shipyard workers. Some of the needed property belonged to Gautier, who was willing to sell but who had fancy ideas about price.

"So the Navy instituted condemnation proceedings, and a federal court fixed the price of Gautier's land at considerably less than he asked. Gautier had to abide by this decision but he had one consolation.

"As the operator of a local ice plant, he looked forward to a brisk business supplying the tenants of the housing project with ice. But this hope was short-lived. Gautier learned that electric refrigerators would be installed in the new houses.

"The Navy had balked him on the land deal, but now Gautier hotfooted to Washington and told his tale of woe to Congressman Colmer. Colmer took his constituent's plea to the Navy demanding that the refrigerators be eliminated. But the Navy refused to be pressured.

"NO FRILLS—It looked as if Gautier once more was out of luck. But just then the \$150,000,000 housing bill reached the Rules Committee—of which Colmer is a member.

"The bill contained a provision for refrigerators and ranges similar to those to be installed in the Pascagoula project. Colmer saw his chance. With a flurry of press statements he denounced such appliances as "frills," and demanded that they be barred in low-cost dwellings.

"For 10 days the battle raged over the issue. Meanwhile Colmer, realizing that even if the ban were approved it still wouldn't take care

of his iceman constituent, since there was no way of making the provision retroactive, did a little horsetrading with Defense Housing Coordinator Charles Palmer.

"Palmer, to expedite the urgent bill, finally agreed to "request" the Navy to cancel the Pascagoula refrigerators. With this assurance, Colmer ungagged the bill in the Rules Committee and it was passed by the House next day.

"NOTE—While they won this battle, Gautier and Colmer may yet lose the war. The Pascagoula project will be completed in a few weeks, and Navy housing officials intend to install refrigerators—regardless of Palmer—unless ordered otherwise in writing by Secretary Frank Knox. It now remains to be seen whether Colmer can pressure Knox into axing the refrigerators Gautier doesn't want."

## U. S. Reports on Combined Earnings Of 5 Refrigeration Manufacturers

WASHINGTON, D. C.—A report on the combined financial statistics and operating factors of five of the major manufacturers of refrigeration equipment and air conditioning units has just been made public by the Federal Trade Commission.

This report is part of the FTC's project for the collection of annual financial reports from a large number of industrial corporations operating in many of the principal industries of the United States. According to the FTC, the corporations whose reports are combined represent five of the more important concerns in the industry from the standpoint of investment and value of goods sold.

The combined net income (before deduction of interest on long-term borrowings and income taxes) on the average total capital of \$44,012,807, employed by the five corporations in

1939, was \$4,632,735, or a rate of return of 10.5%.

However, there was a wide variation in the individual rates of return, from a profit of 1.1 to 24.6%. Two of the five corporations had rates of return higher than the average, and their rates were 16.2 and 24.6%. Rates of return for the other three were 1.1, 2.8, and 6.6%.

The five corporations realized a net income, after provision for the payment of income taxes, amounting to \$3,332,643. Cash dividends paid, or accrued, in 1939 on preferred shares amounted to \$253,056, and on the common shares to \$2,546,718. The cash dividends paid during the year represented a return of approximately 7.9% to the stockholders on the average ledger value (not market value) of their equity of \$35,324,416.

The 1939 operating ratios of the five firms show that the total cost of

goods sold represented 72.7 cents on every dollar of sales. Of the total cost of goods sold, raw materials represented 33.9% of sales; production wages and salaries, 19%; other costs and expenses, 8.8%; depreciation and obsolescence applying to production facilities, 2.1%; and finished goods purchases for resale, 8.9%. The gross margin on sales was 27.3 cents on each dollar of sales.

Total of items listed as expenses represented 19.6% of the total sales. Of the total expenses, selling expenses represented 10.3% of the sales; advertising, 3.4%; administrative and general office expenses, 2.9%; all taxes (except income taxes and social security payments), 0.9%; all social security and pension fund payments, 1.1% (ratio here is to sales dollar and not payrolls); and research and development expenses, 1%.

After deduction of the items listed as expenses together with provisions for uncollectable accounts of 0.4% from the gross margin on sales, plus other operating revenue of 0.4%, there remained a net profit from manufacturing and trading of 7.7 cents from every dollar of sales.

# CASH IN ON THIS BARGAIN OFFER!

## HERE'S YOUR CHANCE TO MAKE REAL PROFITS ON COOLING SALES



Was ~~\$150~~ - NOW \$89.00\*

**Airtemp Room Cooler—Model WC-40—1/3 h. p. for window installations in small rooms; doctors' & dentists' offices, etc.**



Was ~~\$270.00~~ - NOW \$137.50\*

Was ~~\$300.00~~ - NOW \$257.70\*

**DeLuxe floor models—1/2 and 3/4 h. p.—Models FC-60 and 90 for larger rooms and offices.**

\*Suggested "Leader" Prices.

**A Deal For Dealers—Chrysler Airtemp** offers you—for immediate action only—a special deal that will enable you to dominate cooling sales in your territory this summer!

**Bargains in Room Coolers—To help Airtemp dealers get more than their share of the business this year, we have cut the suggested retail prices of all room coolers an average of 40%—with full dealer discounts applying.**

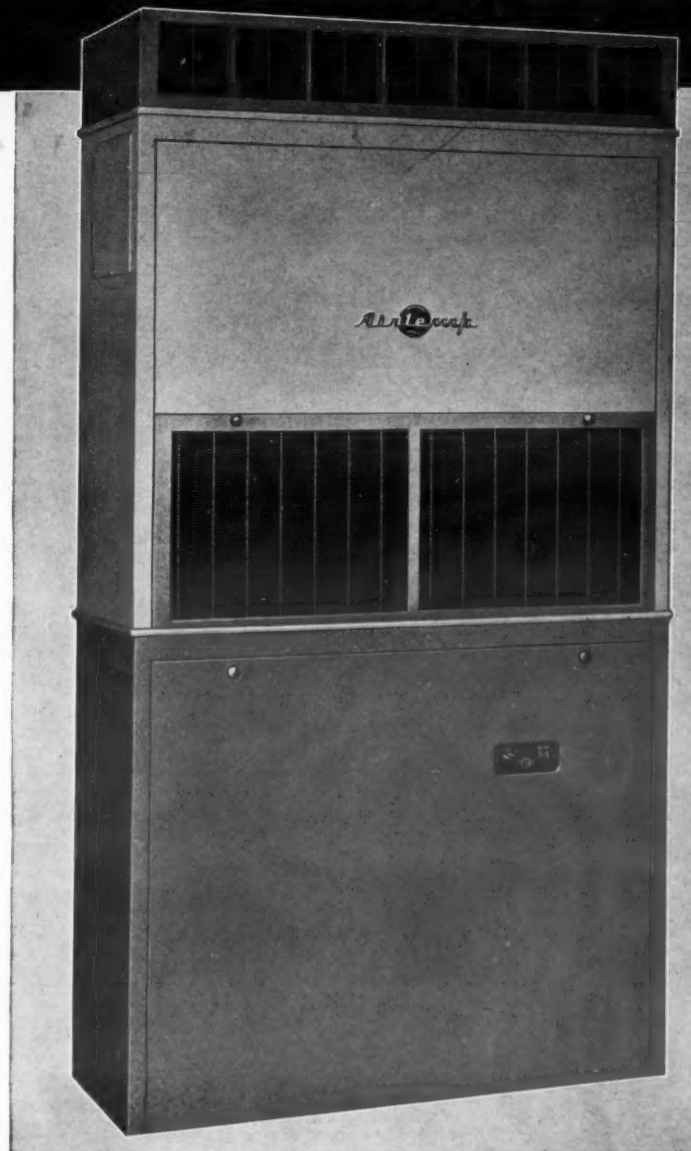
**Sales Leaders—These low-priced room coolers make perfect sales leaders** in introducing the larger, low-priced 3 and 5 horsepower summer air-conditioning units.

**Every Business a Prospect—It is almost literally true that every business in your town is a prospect for summer air conditioning! Only 10% have it. The other 90% want it. Sales resistance has been due to price. Airtemp low-cost units are easy to sell.**

**Time-Tested Units—Airtemp introduced the packaged cooling unit in 1937. Thousands have been sold—are giving excellent service. Basic design remains unchanged.**

**Merchandising Help—Send for our complete Proposition—it includes direct mail, newspaper ads, window displays—real help for you in getting profitable volume.**

**Now is the Time—This is the time to get actively into cooling unit sales. Volume this summer is certain to top all previous records.**



The 5 h. p. packaged cooling unit for stores, offices and restaurants—completely self-contained, easily installed, handsome in appearance. Exclusive radial compressor hermetically sealed in bath of oil saves service expense, operates at low cost. Three h. p. model, same design, available for smaller spaces. Engineered, designed, built and warranted by Chrysler Corporation.

MAIL THE COUPON NOW . . . This Offer Cannot Last!

**CHRYSLER AIRTEMP**  
AIRTEMP DIVISION OF CHRYSLER CORPORATION • DAYTON, OHIO

AIRTEMP DIVISION, DEPT. N, CHRYSLER CORPORATION  
Dayton, Ohio

Gentlemen: Send me complete details on your  
Special Proposition for cooling dealers.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

## Stalmecker Will Manage Kelvinator In Cleveland

CLEVELAND—E. L. Stalmecker has been appointed Cleveland branch manager for Kelvinator, replacing Larry Conlin, who has been named a district manager in the Baltimore-Washington, D. C. area after five months as manager here.

Mr. Stalmecker has been with the organization for two years in Pittsburgh and Youngstown, Ohio, and previously was with Graybar Electric Co. for five years. Before that, he operated his own radio dealership in Pittsburgh, and for a time was also associated with Boggs & Buhl, distributorship there.



## SELF-CONTAINED AIR CONDITIONERS

### Window-Type Unit With an All-Year Function

This deluxe model "Wizardsaire" window room cooler performs cooling, dehumidifying, circulating, cleaning, and ventilating functions in the summer months, and has a ventilating and circulating function in the winter. Model shown is the 1/2-hp. unit.



### Certified Products Co.

#### Model S-31 Wizardsaire—(Summer Model)

**Dimensions:** 14 1/4 inches high, 27 3/4 inches wide, 18 inches deep. Cabinet extends 9 inches inside room.

**Functions:** Cooling, dehumidifying, air circulation, filtering (outside air only).

**Cabinet:** Furniture steel cabinet with thermal and acoustic insulation.

**Condensing Unit:** Two-cylinder, 1/2-hp. hermetic "Freon-12" compressor unit. Compressor resilient mounted.

**Blower:** Pressure-type propeller fan driven at 1,500 r.p.m. by 1/2-hp. motor.

**Air Circulation:** Air intake at right side, 80% room air, 20% filtered outside air.

Air delivery, 160 c.f.m., of which 30 c.f.m. is outside air. Air discharge in front of unit, direction may be adjusted four ways. Outside air opening may be closed off.

**Cooling Surface:** Continuous tube evaporator, copper tube and brass fins.

**Capacity of Unit:** 4,100 B.t.u. per hour at outside air conditions 90° F., 50% relative humidity, room air conditions 80° F., 50% relative humidity.

**Air Cleaning Medium:** Washable hair glass filter.

**Suggested or List Price:** \$139.50 f.o.b. Toledo, Ohio.

**Control Equipment:** "On" and "off" switch on line cord.

#### Model C-31 Wizardsaire—(Deluxe Model)

**Dimensions:** 14 1/4 inches high, 27 3/4 inches wide, and 19 inches deep. Cabinet extends

10 inches inside room.

**Functions:** Cooling, dehumidifying, circulating, and cleaning.

**Cabinet:** Same as Model S-31.

**Condensing Unit:** Same as Model S-31.

**Blower:** Same as Model S-31.

**Air Circulation:** Air intake at right side of unit, may be adjusted to provide up to 20% outside air when cooling, or up to 100% outside air when ventilating. Total air delivery, 160 c.f.m., all filtered. Air discharge in front of unit, direction may be adjusted four ways.

**Cooling Surface:** Same as Model S-31.

**Capacity of Unit:** Same as Model S-31.

**Air Cleaning Medium:** Viscous type throw-away filter.

**Suggested or List Price:** \$159.50.

**Control Equipment:** Two toggle switches, one for "cooling," and one for "ventilation." Adjustable damper.

#### Model C-51 Wizardsaire—(Deluxe Model)

**Dimensions:** 14 1/4 inches high, 27 3/4 inches wide, and 20 1/4 inches deep. Cabinet extends 10 inches inside room.

**Functions:** Cooling, dehumidifying, circulating, and cleaning.

**Cabinet:** Same as Model S-31.

**Condensing Unit:** Two-cylinder, 1/2-hp. hermetic compressor. Compressor resilient mounted on springs and rubber.

**Blower:** Quiet, pressure-type propeller fan driven at 1,500 r.p.m. by 1/2-hp. motor.

**Air Circulation:** Air intake at right side of unit, may be adjusted to provide up to 20% outside air when cooling, or up to 100% outside air when ventilating. Total air delivery, 180 c.f.m., all filtered. Air discharged in front of unit, direction may be adjusted four ways.

**Cooling Surface:** Same as Model S-31.

**Capacity of Unit:** 5,350 B.t.u. per hour at outside air conditions 90° F., 50% relative humidity, room air conditions 80° F., 50% relative humidity.

**Air Cleaning Medium:** Viscous type throw-away filter.

**Suggested or List Price:** \$199.50.

**Control Equipment:** Same as Model C-31.

### Fairbanks, Morse & Co.

#### Model SC12A Room Cooler

**Dimensions:** 40 inches high, 43 inches wide, and 18 1/2 inches deep.

**Functions:** Cooling, circulating, dehumidifying, ventilating, and cleaning.

**Cabinet:** Round-cornered steel, finished in hand-rubbed walnut. Insulated with 1/2-inch sea-pack. Sponge rubber, Celotex, felt, and jute used as sound insulants.

**Condensing Unit:** Fairbanks-Morse 1-hp. 4-cylinder air-cooled "Freon-12" compressor driven at 760 r.p.m.

**Blower:** Two forward-curved, single inlet, centrifugal type. One 7 1/2 inches and the other 10 inches, mounted on single shaft and driven at 1,025 r.p.m. by 1/2-hp. motor.

**Air Circulation:** Air intake and exhaust at back, recirculation grille on right side, discharge grille (which may be arranged to direct the air as desired) on top. Velocity 700 f.p.m. at 400 c.f.m.

**Cooling Surface:** Continuous copper fin direct expansion coil.

**Capacity of Unit:** 12,510 B.t.u. per hour with 80° and 67° air in; 59.4° and 56.1° air out; and 95° air into the condenser.

**Air Cleaning Medium:** Two Arco replaceable filters.

**Suggested or List Price:** Not given.

**Control Equipment:** Fresh air adjusting knob, compressor and fan switch, expansion valve.

#### Model SC12W Room Cooler

**Dimensions:** 32 3/4 inches high, 34 1/4 inches wide, and 17 1/2 inches deep.

**Functions:** Cooling, circulating, dehumidifying, ventilating, and cleaning.

**Cabinet:** Same as Model SC12A.

**Condensing Unit:** Fairbanks-Morse 1-hp. 4-cylinder water-cooled "Freon-12" compressor driven at 830 r.p.m.

**Blower:** One forward-curved, centrifugal type blower, 3 1/2 inches in diameter, driven at 1,200 r.p.m. by 1/2-hp. motor.

**Air Circulation:** Air intake through grille on right side. Air discharge (which may be arranged to direct air in one of four directions) on top. Velocity of approximately 700 f.p.m. at 400 c.f.m.

**Cooling Surface:** Same as Model SC12A.

**Capacity of Unit:** 13,400 B.t.u. per hour at 80° dry bulb and 67° wet bulb air in; 59° dry bulb, 55.5° wet bulb air out; with leaving condensing water temperature of 95°.

**Air Cleaning Medium:** One Arco replaceable filter.

**Suggested or List Price:** Not given.

**Control Equipment:** Fan and compressor switch, water regulator, and direct expansion valve.

#### Hi-Boy Model SCH-36W

**Dimensions:** 89 inches high, 46 1/4 inches wide, and 22 3/4 inches deep.

**Functions:** Cooling, heating, circulating, dehumidifying, ventilating, and cleaning. Humidifying optional.

**Cabinet:** Constructed of 14, 16, and 18 gauge stretched leveled steel with round corners. Baked-on blue-gray finish. Inside insulated with waterproof compound and 1/2-inch thick Celotex board.

**Condensing Unit:** Fairbanks-Morse 4-cylinder, 3-hp., water-cooled "Freon-12" compressor driven at 1,060 r.p.m.

**Blower:** One forward-curved, double inlet, centrifugal type blower 9 3/4 inches in diameter, driven by 1/2-hp. motor with an adjustable speed pulley, 730-1,100 r.p.m.

**Air Circulation:** Air intake on front 3 1/2 feet off floor. (Optional arrangement is on back, at same height, which may be used as fresh air inlet also.) Air discharge on front, 6 1/2 feet off floor, through double deflection type grille. Provision for discharge out of sides is also provided. Discharge velocity 900 f.p.m. when handling 1,200 c.f.m.

**Cooling Surface:** Direct expansion spined copper Thermek coil. A coil also cools compressor compartment.

**Heating Surface:** Spined copper Thermek coil for steam or hot water.

**Capacity of Unit:** Cooling: 37,000 B.t.u. at 85° dry bulb, 65° wet bulb air in; 57.2° dry bulb, 55° wet bulb air out; with 75° condensing water. Heating: 85,000 B.t.u. per hour at 70° air in, 145° air out, with 5 lbs. steam.

**Humidification:** Spray at 4.5 g.p.h. with 50 lbs. pressure. More if desired.

**Air Cleaning Medium:** One Walton replaceable filter, 2 inches thick.

**Suggested or List Price:** Not given.

**Control Equipment:** Off-fan on-compressor on switch, temperature regulator, solenoid valve, water regulator, expansion valve.

#### Hi-Boy Model SCH-60W

**Dimensions:** 89 inches high, 46 1/4 inches wide, and 22 3/4 inches deep.

**Functions:** Cooling, heating, circulating, ventilating, cleaning, and dehumidifying. Humidifying optional.

**Cabinet:** Same as SCH-36W.

**Condensing Unit:** Fairbanks-Morse 4-cylinder, 5-hp. water-cooled "Freon-12" compressor driven at 1,265 r.p.m.

**Blower:** Two double inlet, forward-curved, centrifugal type blowers, 9 3/4 inches in diameter, driven by 1/2-hp. motor through an adjustable "V" belt pulley at 730 to 1,100 r.p.m.

**Air Circulation:** Air intake on front 3 1/2 feet off floor. (Optional arrangement is on back, at same height, which may be used as fresh air inlet also.) Air discharge in front, 6 1/2 feet off floor, through double deflection type grille. Provision for discharge out of sides is also provided. Discharge velocity 1,000 f.p.m. when handling 2,000 c.f.m.

**Cooling Surface:** Spined copper direct expansion Thermek coil. A coil is also installed to cool compressor compartment.

**Heating Surface:** One or two-row steam or water coil.

**Capacity of Unit:** Cooling: 61,400 B.t.u. per hour at 80° dry bulb and 65° wet bulb air in; 57.6° dry bulb, 57.1° wet bulb air out; with 75° condensing water. Heating: 130,000 B.t.u. per hour at 70° air in, 130° air leaving with 5 lbs. steam pressure.

**Humidification:** See Model SCH-36W.

**Air Cleaning Medium:** One Walton standard replaceable filter, 2 inches thick.

**Suggested or List Price:** Not given.

**Control Equipment:** Off-fan on-compressor on switch, temperature regulator, solenoid valve, water regulator, expansion valve.

#### Model SC-90W Store Cooler

**Dimensions:** 88 3/4 inches high, 63 3/4 inches wide, and 28 3/4 inches deep.

**Functions:** Cooling, heating, circulating, dehumidifying, ventilating, and cleaning. Humidifying is standard optional equipment.

**Cabinet:** 12 gauge rounded steel channels comprise structural supports. Interior insulated with waterproof compound and 1/2-inch thick Celotex board. Finished in blue-gray.

**Condensing Unit:** Fairbanks-Morse 8-cylinder, 7 1/2-hp. water-cooled "Freon-12" compressor driven at 920 r.p.m.

**Blower:** Two double-inlet, forward-curved, centrifugal type blowers, 14 1/4 inches in diameter. Fan motor horsepower dependent on rows of coils and external static required, ranges from 3/4 to 2 hp.; speed varies from 700 to 900 r.p.m.

**Air Circulation:** Air intake at front or back, air discharge either out of top vertically, or out of front or back horizontally. Discharge velocity 800 f.p.m. when handling 3,000 c.f.m.

**Cooling Surface:** Four-row copper spined Thermek direct expansion coil. Heat exchanger also furnished.

**Heating Surface:** One and two-row steam or hot water coils.

**Capacity of Unit:** Cooling: 91,600 B.t.u. per hour with 80° dry bulb, 65° wet bulb air in; 57.6° dry bulb, 55.1° wet bulb leaving air; with 75° condensing water. Heating: 275,000 B.t.u. per hour at 70° air in, 155° leaving air with 5 lbs. steam pressure.

**Humidification:** Two nozzles at 4.5 g.p.h. each.

**Air Cleaning Medium:** Three Walton standard replacement filters.

**Suggested or List Price:** Not given.

**Control Equipment:** Water regulator, solenoid valve, expansion valve.

#### Model SC-120W Store Cooler

**Dimensions:** 88 3/4 inches high, 63 3/4 inches wide, and 28 3/4 inches deep.

**Functions:** Cooling, heating, circulating, dehumidifying, ventilating, and cleaning. Humidifying is standard optional equipment.

**Cabinet:** Same as Model SC-90W.

**Condensing Unit:** Fairbanks-Morse 8-cylinder, 10-hp. water-cooled "Freon-12" compressor driven at 1,180 r.p.m.

**Blower:** Two double-inlet, forward-curved centrifugal type blowers, 14 1/4 inches in diameter, driven by a variable speed pulley. Fan motor horsepower dependent on number of rows of coils, range from 1 to 2 hp.; speed varied from 600 to 920 r.p.m.

**Air Circulation:** Air intake at front or back, air discharge either out of top vertically, or out of front or back horizontally. Discharge velocity 1,100 f.p.m. when handling 4,000 c.f.m.

**Cooling Surface:** Four-row copper spined Thermek direct expansion coil. Heat exchanger also furnished.

**Heating Surface:** One or two-row steam or hot water coils.

**Capacity of Unit:** Cooling: 121,900 B.t.u. per hour at 80° dry bulb, 65° wet bulb air in; 57.8° dry bulb, 55.1° wet bulb leaving air; with 75° condensing water. Heating: 367,000 B.t.u. per hour at 70° air in, 155° leaving air, with 5 lbs. steam pressure.

**Humidification:** Same as Model SC-90W.

**Air Cleaning Medium:** Three Walton replaceable filters.

**Suggested or List Price:** Not given.

**Control Equipment:** Water regulator, solenoid valve, two expansion valves.

#### Model SC-180W Store Cooler

**Dimensions:** Two sections: Fan section—36 1/4 inches by 35 3/4 inches by 69 3/4 inches—is bolted to front of compressor and coil section—80 3/4 inches high, 74 1/4 inches wide, and 38 3/4 inches deep.

**Functions:** Cooling, circulating, dehumidifying, ventilating, and cleaning. Humidifying is standard optional equipment. Heating is available at additional cost.

**Cabinet:** 12-gauge structural supports, removable 26-gauge panels. Insulated throughout with waterproof, flameproof felt base board. Finished in blue-gray.

**Condensing Unit:** Fairbanks-Morse 4-cylinder, 15-hp. water-cooled "Freon-12" compressor driven at 530 r.p.m.

**Blower:** Two double-inlet, forward-curved centrifugal type blowers, 16 1/4 inches in diameter driven by variable pitch drive. Fan horsepower and speed vary from 1 to 3 hp.

**Air Circulation:** Air intake on back. Two different discharge arrangements, vertical or horizontal. Discharge velocity 1,500 f.p.m. when handling 6,000 c.f.m.

**Cooling Surface:** Four-row copper spined Thermek direct expansion coil.

**Heating Surface:** One or two-row steam or hot water coils.

**Capacity of Unit:** Cooling: 183,400 B.t.u. per hour with 80° dry bulb, 65° wet bulb air in; 57.7° dry bulb, 55.1° wet bulb leaving air; with 75° condensing water. Heating: 551,000 B.t.u. per hour at 70° air in, 155° leaving air, with 5 lbs. steam pressure.

**Humidification:** Three sprays rated at 4.5 g.p.h. each at 50 lbs. pressure. More can be supplied if desired.

**Air Cleaning Medium:** Six filters of standard 2-inch Walton replacement type.

**Suggested or List Price:** Not given.

**Control Equipment:** Water regulator, solenoid valve, two expansion valves.

#### Model SC-240W Store Cooler

**Dimensions:** Two sections: Fan section—35 1/4 inches by 80 inches by 36 1/4 inches—is bolted to front of compressor and coil section—80 3/4 inches high, 91 1/4 inches wide, and 44 3/4 inches deep.

**Functions:** Cooling, circulating, dehumidifying, ventilating, and cleaning. Humidifying is standard optional equipment. Heating is available at additional cost.

**Cabinet:** Same as Model SC-180W.

**Condensing Unit:** Fairbanks-Morse 4-cylinder 20-hp. water-cooled "Freon-12" compressor driven at 690 r.p.m.

**Blower:** Two forward-curved, double-inlet centrifugal type, 17 1/4 inches in diameter wheels driven by variable speed drive. Fan horsepower ranges from 1 1/2 to 5 hp. The 5-hp. job is supplied with a standard drive.

**Air Circulation:** Air intake on back. Two different discharge arrangements, vertical and horizontal. Discharge velocity 1,600 f.p.m. when handling 8,000 c.f.m.

**Cooling Surface:** Four-row copper spined Thermek coil with face area of 16 sq. ft.

**Heating Surface:** One or two-row steam or hot water coil of same type and area as cooling coil.

**Capacity of Unit:** Cooling: 243,600 B.t.u. per hour at 80° dry bulb and 65° wet bulb air in; 58° dry bulb, 55.1° wet bulb leaving air; with 75° condensing water. Heating: 734,000 B.t.u. per hour at 70° air in, 155° leaving air with 5 lbs. steam pressure.

**Humidification:** Same as Model SC-180W.

**Air Cleaning Medium:** Six filters of standard 2-inch Walton replacement type.

**Suggested or List Price:** Not given.

**Control Equipment:** See Model SC-180W.

## Speed Up Installations with These Single Unit Heavy Duty Controls

Small control adjustability and convenience now available for installations to 2 HP single or polyphase

Discover for yourself "something new" in control equipment for those 1 HP to 2 HP compressor installations. Try, on your next such job, a Penn 713 Series or 1713 Series control. The 713 Series has outside adjusting screws, but adjustments are not calibrated. The 1713 Series has outside adjusting screws and all adjustments are plainly and accurately calibrated.

Both provide low side or suction pressure control combined with high pressure cut-out. Each is available with or without trip-free bimetal motor overload protection, which is designed so that it is impossible to block the trip-out contacts in closed position, either by accident or intent.

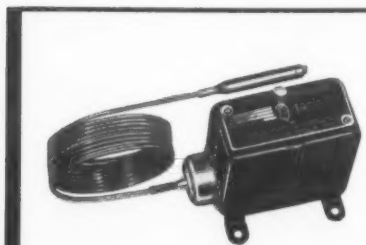
Both series are provided with snug-fitting, slip-over type cover. All terminals and operating parts are completely accessible with cover removed. Heavy steel angle mounting bracket at bottom of control provides for convenient mounting on all units.



### Order Your Compressors with Choice of these Controls

For your 1 HP to 2 HP jobs, specify compressors equipped with your choice of these new two-pole heavy duty dual pressure controls. If the installation is one that calls for controls which do not invite user adjustment of settings, specify 713 Series. But, if frequent, accurate changes in settings must be made, specify 1713 Series. Or, pick up your choice of these controls as needed from your parts and accessories jobber. Write for detailed information.

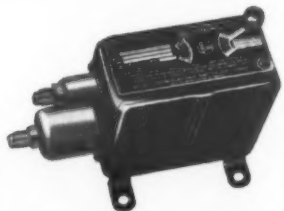
Penn Electric Switch Co., Goshen, Indiana. In Canada: Powerlite Devices, Ltd., Penn Electric Switch Division, Toronto, Ont. Export: 100 Varick St., New York City. Branches, representatives and distributors in principal cities.



Illustrated at left is a typical 1260 Series control for temperature applications. Shown with Style 1 clamp-on or liquid immersion bulb. Available with cross-ambient bulb for liquid immersion and also with fin type bulb (Style 18) for close differential air temperature control. Available in 260 Series without the calibrated range scale.



Illustrated at left is 265 Series temperature control, equipped with "cold control" knob and manual "off-automatic" switch. An ideal control for ice cream cabinet and beverage cooler applications. Also available without external adjusters as well as with calibrated adjustment scales. Also supplied with pressure bellows for all pressure applications within its rating to 1/2 HP max.



Illustrated above is the Penn 1260 Series dual pressure control, with calibrated adjustment scale on both cut-in point and differential settings. Type 1260P303 shown has limited adjustment finger-tip knob on differential adjuster. Also available in standard low side models and in 260 and 261 Series without calibrated scales.

More information on what Penn Controls will do for you—One of a Series.

# PENN

**Penn-Built Controls for Many Applications**

Thermostats, Bonnet Controls, Ductstats, Fire Protection Controls, Water Temperature Controls, Boiler Pressure Controls, Humidistats, Stack Switches, Stoker Timer Relays, Solenoid Gas Valves, General Purpose Relays, Solenoid Refrigerant and Water Valves, Refrigeration Pressure and Temperature Controls, Water Valves, Pump Controls, Air Compressor Controls, Air Volume Controls, Line Starters.



## Fair and Cooler

By Henry Knowlton

### Evaporative Condensers Solve Diesel Problem

J. W. Bostwick, in charge of air conditioning for Fairbanks-Morse & Co., feels the industry is missing a good bet in not selling more evaporative condensers for use with diesel engines. Principal advantage for condensers of this type is that the diesel can be operated with a closed water system, preventing the formation of lime and scale common where make-up water is necessary.

Another trick is to connect unit heaters on the same cycle, using the diesel waste heat for plant space

heating during winter. Control of both the unit heaters and evaporative condensers may be manual, semi-automatic, or completely automatic.

A 1,400-hp. diesel requires an evaporative condenser of a size suitable for a 40-ton refrigeration system; a 10-hp. diesel can be cooled with a 1-ton evaporative condenser.

Plenty of diesels are being sold under the defense program.

### Barracks Underground?

Army engineers are planning the construction of huge underground barracks which are to be air condi-

tioned. If the initial experimental unit is considered successful, many others may be built. Plans for the first unit have already been increased in size four times, and construction has not started.

### 'Red Menace' To Help Discover Leaks

Infinitesimal leaks in refrigerant connections constitute one of the most perplexing and costly problems for service engineers and installation men. Often by the time a "slow" leak is found the charge of gas is lost.

A California manufacturer is experimenting with a bright red substance, that when added to the refrigerant, leaves a deposit on the outside of the pipe or fitting where the leak occurs. Some leaks are so small that the bright red film does not

show up for a day or two after the system has been installed and final inspection made.

### Boilermaker Puts on Fighting Togs

All through the 1930's manufacturers of boilers and radiators watched their residential markets go to the forced warm air heating or "winter air conditioning" industry. Most of the efforts of the boiler industry to regain their lost business have been polite advertisements about the benefits of radiator heat.

But Burnham Boiler Co. of Irvington, N. Y. seems to have decided not to take it "lying down."

In a current issue of House and Garden a section of a Burnham advertisement reads as follows: "Some folks have been bowled over by the so-called 'air conditioning'

systems. Mainly because they were 'all the go' for a while.

"They didn't stop to think that there was no real need for humidifying, if the heat wasn't so hot, it literally burned the air dry, and so needed remoistening."

"They didn't stop to consider that if the fan pushed circulation didn't stir up the dust, there wouldn't be any need of filters to keep it down."

"They didn't give thought to the fact, that any warm air heating system must first heat the top of the room, and work down to the floor last."

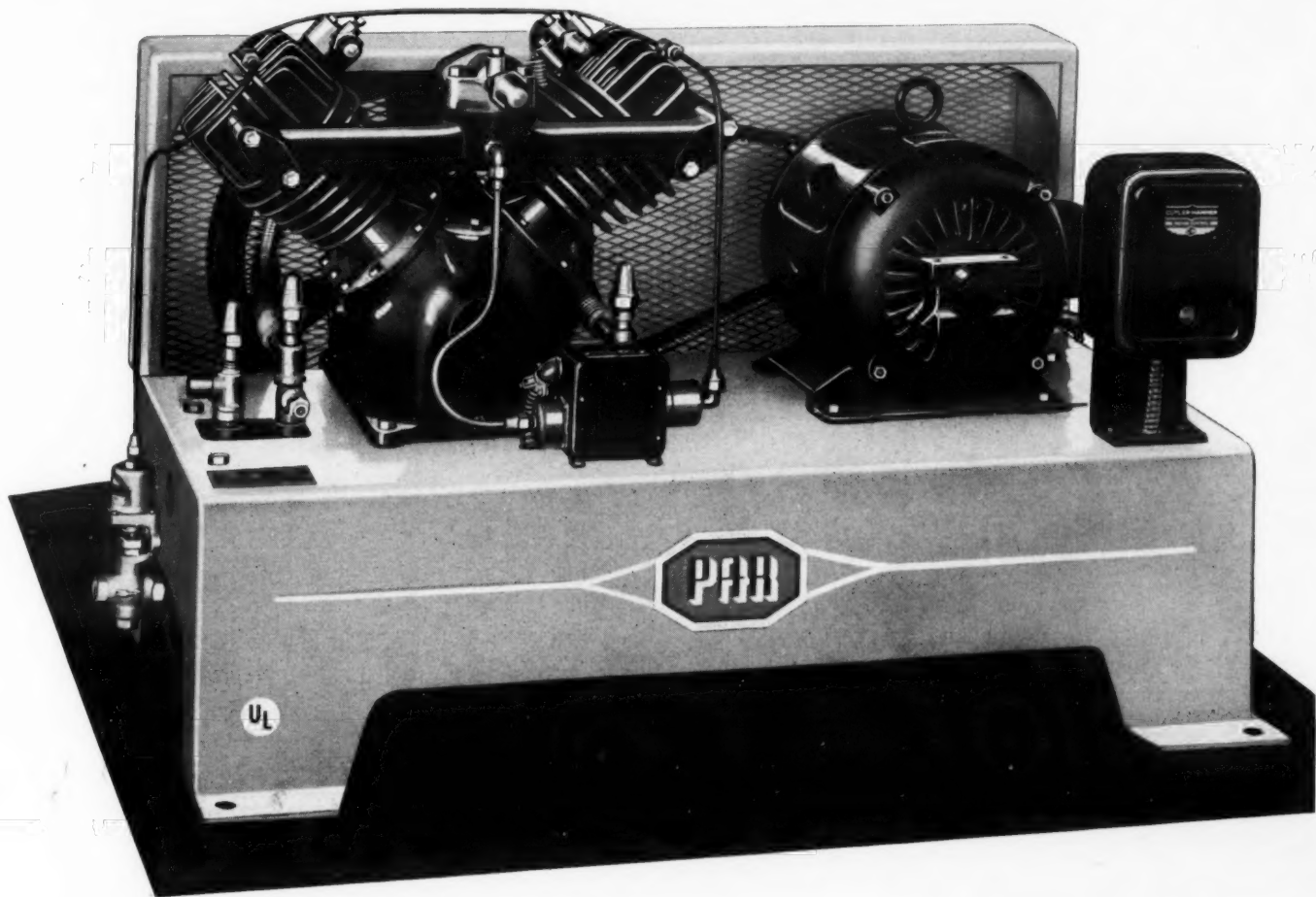
"And that it had only the convected heat, and none at all of the healthy sun-like, floor warming radiant heat coming from radiators."

"They allowed style to make them pay for an extra heater, and a storage tank for kitchen and bath hot water, when with radiator heat the one boiler and the one fire does both jobs, and saves a lot of extra fuel."

# PAR

## REFRIGERATION EQUIPMENT

The Model HW-50, water cooled, 4-cylinder 5 H.P. PAR unit here pictured, is a he-man heavy duty outfit . . . a brute for work. There is a PAR of correct size for every refrigeration job . . . 30 models . . . 2 and 4-cylinder compressors . . . air and water cooled . . . 1/5 H.P. to 5 H.P.



## "It's a PUMPING Marvel"

● Faster temperature "pull-down" . . . more work with less effort and at lower power cost . . . slower speed for longer life — these give PAR owners extra value for the money they have invested. *Every model is a "pumping marvel"* . . . because PAR crank-shaft-design compressors, with multiple-ring pistons, do

more work at slower speed . . . more pumping with less wear and tear.

● PAR precision engineering gives you a complete unit of ruggedly simple design, minus bulky excess iron . . . a guarantee of peak performance, maximum economy and long life. You can't buy more for your money!

### THERE'S A PAR UNIT FOR EVERY JOB • SEE YOUR JOBBER

**ALABAMA**  
MOBILE—MOBILE REFRIGERATION SUPPLY CO.  
MONTGOMERY—TEAGUE HARDWARE COMPANY  
**ARIZONA**  
PHOENIX—J. CARL WHITE COMPANY  
**CALIFORNIA**  
FRESNO—ARBELL REFRIGERATION SUPPLY CO.  
LONG BEACH—REFRIGERATION SUPPLIES  
DISTRIBUTORS  
LOS ANGELES—REFRIGERATION SUPPLIES  
DISTRIBUTORS  
OAKLAND—CALIFORNIA REFRIGERATOR COMPANY  
SACRAMENTO—HINSHAW SUPPLY COMPANY  
SAN DIEGO—REFRIGERATION SUPPLIES  
DISTRIBUTORS  
SAN FRANCISCO—CALIFORNIA REFRIGERATOR CO.  
**CONNECTICUT**  
NEW HAVEN—RESCO, INC.  
**FLORIDA**  
JACKSONVILLE—BOWEN REFRIGERATION  
SUPPLY, INC.  
MIAMI—BERNER-PEASE COMPANY  
TAMPA—BOWEN REFRIGERATION SUPPLY, INC.  
WEST PALM BEACH—MOTOR PARTS &  
EQUIPMENT CO., INC.  
**GEORGIA**  
ATLANTA—BOWEN REFRIGERATION SUPPLY, INC.  
MACON—LOWE ELECTRIC COMPANY  
**ILLINOIS**  
CHICAGO—AUTOMATIC HEATING & COOLING CO.  
CHICAGO—H. W. BLYTHE COMPANY  
**INDIANA**  
INDIANAPOLIS—F. H. LANGSENKAMP COMPANY  
SOUTH BEND—F. H. LANGSENKAMP COMPANY

**IOWA**  
CEDAR RAPIDS—DENNIS REFRIGERATION SUPPLY  
COMPANY  
DAVENPORT—REPUBLIC ELECTRIC COMPANY  
DES MOINES—DENNIS REFRIGERATION SUPPLY  
COMPANY  
SIOUX CITY—DENNIS REFRIGERATION SUPPLY  
COMPANY  
WATERLOO—WINTERSBOTTOM SUPPLY COMPANY  
**KANSAS**  
WICHITA—HOWARD SUPPLY COMPANY  
**KENTUCKY**  
LEXINGTON—UNITED SERVICE COMPANY, INC.  
LOUISVILLE—S. W. H. SUPPLY COMPANY  
**MARYLAND**  
BALTIMORE—PARKS & HULL APPLIANCE CORP.  
**MASSACHUSETTS**  
PITTSFIELD—AIRD-DON COMPANY  
SPRINGFIELD—C. P. PAYSON COMPANY  
WORCESTER—STANDARD SUPPLY COMPANY, INC.  
**MICHIGAN**  
FLINT—LIPSEY DISTRIBUTING COMPANY  
GRAND RAPIDS—B. F. HARRIS & SON  
**MINNESOTA**  
MINNEAPOLIS—REFRIGERATION & INDUSTRIAL  
SUPPLY COMPANY  
**MISSOURI**  
KANSAS CITY—FORSYTH PUMP & MACHINERY  
COMPANY  
ST. LOUIS—BRASS & COPPER SALES COMPANY  
**NEBRASKA**  
LINCOLN—WICKHAM SUPPLY COMPANY  
OMAHA—INTERSTATE MACHINERY & SUPPLY CO.

**NEW JERSEY**  
NEWARK—T. W. BINDER COMPANY  
**NEW YORK**  
ALBANY—AIRD-DON COMPANY  
BROOKLYN—COLEMAN ELECTRICAL SUPPLY  
COMPANY, INC.  
BUFFALO—ROOT NEAL & COMPANY  
KINGSTON—AIRD-DON COMPANY  
NEW YORK—FIDELCO INDUSTRIES, INC.  
PLATTSBURG—AIRD-DON COMPANY  
SCHENECTADY—AIRD-DON COMPANY  
SYRACUSE—CENTRAL SERVICE SUPPLY COMPANY  
TROY—AIRD-DON COMPANY  
**NORTH CAROLINA**  
CHARLOTTE—HENRY V. DICK & COMPANY  
GREENSBORO—HABCO, INC.  
RALEIGH—HENRY V. DICK & COMPANY  
**OHIO**  
AKRON—PERCY G. HANSEN  
CINCINNATI—MERKEL BROTHERS COMPANY  
CLEVELAND—DEBES & COMPANY  
COLUMBUS—REFRIGERATION ELECTRIC  
SUPPLY COMPANY  
DAYTON—W. H. KIEPABER COMPANY  
TOLEDO—HEAT & POWER ENGINEERING CO.  
**OKLAHOMA**  
OKLAHOMA CITY—MIDDEK SUPPLY COMPANY  
TULSA—MACHINE TOOL & SUPPLY COMPANY  
**OREGON**  
PORTLAND—JACOBS & GILE, INC.  
**PENNSYLVANIA**  
PHILADELPHIA—VICTOR SALES & SUPPLY  
PITTSBURGH—JOSEPH WOODWELL COMPANY  
SCRANTON—CENTRAL SERVICE SUPPLY CO.

**SOUTH CAROLINA**  
COLUMBIA—HENRY V. DICK & COMPANY  
**TENNESSEE**  
CHATTANOOGA—PEGLAR MACHINERY COMPANY  
KNOXVILLE—HENRY V. DICK & COMPANY  
MEMPHIS—UNITED REFRIGERATOR SUPPLY CO.  
NASHVILLE—ELECTRA DISTRIBUTING CO.  
**TEXAS**  
CORPUS CHRISTI—HOLSWORTH EQUIPMENT CO.  
DALLAS—ELECTROMOTIVE CORPORATION  
EL PASO—J. CARL WHITE COMPANY  
HOUSTON—D. C. LINGO COMPANY  
LUBBOCK—R & R PARTS & SUPPLY COMPANY  
WICHITA FALLS—UNITED ELECTRIC SERVICE CO.  
**VIRGINIA**  
NEWPORT NEWS—NOLAND COMPANY  
NORFOLK—NOLAND COMPANY  
RICHMOND—A. B. TILLER, INC.  
**WASHINGTON**  
SPOKANE—REFRIGERATION PARTS SUPPLY CO.  
**WEST VIRGINIA**  
CHARLESTON—AIR CONDITIONING & REFRIGERA-  
TION SUPPLY  
**WISCONSIN**  
MILWAUKEE—REFRIGERATION SPECIALTY CO.  
**CANADA**  
MONTREAL, QUEBEC—RAILWAY & ENGINEERING  
SPECIALTIES, LTD.  
TORONTO, ONTARIO—RAILWAY & ENGINEERING  
SPECIALTIES, LTD.  
VANCOUVER, BRITISH COLUMBIA—FLECK  
BROS., LTD.  
WINNIPEG, MANITOBA—RAILWAY & ENGINEER-  
ING SPECIALTIES, LTD.

### EXPORT DEPARTMENT

MELCHIOR, ARMSTRONG, DESSAU COMPANY, RIDGEFIELD, N. J.

MODERN EQUIPMENT CORP., DEFIANCE, OHIO, U.S.A.







## Curtis Refrigerating Machine Co.

### Model 300-SOC

**Dimensions:** 89½ inches high, 36 inches wide, and 21½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, circulating. Heating optional.

**Cabinet:** Counter steel construction, bonderized. Hammerloid finish. Acoustical insulation.

**Condensing Unit:** Curtis 3-hp., 2-cylinder "Freon-12" compressor, driven at 600 r.p.m. Thermostatic control.

**Blower:** Multi-vane, slow-speed ¼-hp. fan.

**Air Circulation:** Air intake at front center, air discharge at front top through adjustable grilles. Discharge velocity 1,020 f.p.m. Room air circulation 1,600 c.f.m.

**Cooling Surface:** Balanced coil, face area 3.5 sq. ft.

**Capacity of Unit:** 38,750 B.t.u. with entering air at 80° F. dry bulb, 67° F. wet bulb.

**Air Cleaning Medium:** Wet zone, all metal non-rusting type filter.

**Suggested or List Price:** Not given.

**Control Equipment:** Thermostat, thermostatic multi-outlet expansion valves, solenoid, water regulating valve, pressure control.

### Model 500-SOC

**Dimensions:** 89½ inches high, 36 inches wide, and 21½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, circulating. Heating optional.

**Cabinet:** Same as Model 300-SOC.

**Condensing Unit:** Curtis 5-hp., 2-cylinder "Freon-12" condensing unit driven at 690 r.p.m. Thermostatic control.

**Blower:** Multi-vane, slow-speed ½-hp. fan.

**Air Circulation:** Air intake at front center, air discharge at front top through adjustable grilles. Discharge velocity 1,340 f.p.m. Room air circulation 2,100 c.f.m.

**Cooling Surface:** Balanced coil, face area 3.5 sq. ft.

**Capacity of Unit:** 63,250 B.t.u. with entering air at 80° F. dry bulb, 67° F. wet bulb.

**Air Cleaning Medium:** Wet zone, all metal non-rusting type filter.

**Suggested or List Price:** Not given.

**Control Equipment:** Same as previous model.

### Model 750-CTAC Self-Contained Central Type

**Dimensions:** 75½ inches high, 69 inches wide, and 33½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, circulating. Heating optional.

**Cabinet:** Counter steel, bonderized. Hammerloid finish. Acoustical insulation.

**Condensing Unit:** Curtis 7½-hp., 2-cylinder "Freon-12" condensing unit driven at 690 r.p.m.

**Blower:** Multi-vane type, 2 fan wheels, driven at 520 r.p.m. by ½-hp. motor.

**Air Circulation:** Air intake at top rear, air discharge at front top. Room air circulation, 3,200 c.f.m.

**Capacity of Unit:** 87,000 B.t.u. per hour with entering air at 80° F. dry bulb, 67° F. wet bulb.

**Air Cleaning Medium:** See previous model.

**Suggested or List Price:** Not given.

**Control Equipment:** See previous model.

**Model 1000-CTAC Self-Contained Central Type**

**Dimensions:** 75½ inches high, 69 inches wide, and 33½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, circulating. Heating optional.

**Cabinet:** Counter steel, bonderized. Hammerloid finish. Acoustical insulation.

**Condensing Unit:** Curtis 10-hp., 4-cylinder "Freon-12" condensing unit driven at 590 r.p.m. Thermostatic control.

**Blower:** Multi-vane type, 2 fan wheels, driven at 520 r.p.m. by ½-hp. motor.

**Air Circulation:** Air intake at top rear, air discharge at front top. Room air circulation, 3,200 c.f.m.

**Capacity of Unit:** 126,000 B.t.u. with entering air at 80° F. dry bulb, 67° F. wet bulb.

**Air Cleaning Medium:** See previous model.

**Suggested or List Price:** Not given.

**Control Equipment:** See previous model.

**Model 1500-CTAC Self-Contained Central Type**

**Dimensions:** 75 inches high, 84 inches wide, and 34 inches deep.

**Functions:** Cooling, dehumidifying, cleaning, and circulating.

**Cabinet:** Same as Model 750-CTAC.

**Condensing Unit:** Curtis 15-hp., 4-cylinder "Freon-12" compressor driven at 590 r.p.m. Thermostatic control.

**Blower:** Multi-vane type, 3 fan wheels, driven at 650 r.p.m. by 1-hp. motor.

**Air Circulation:** Air intake at top rear, air discharge at front top. Room air circulation, 6,300 c.f.m.

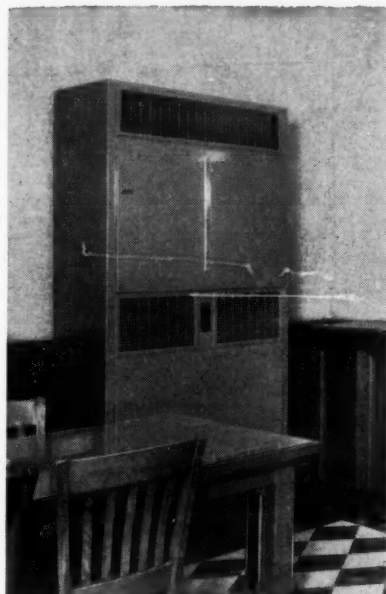
**Capacity of Unit:** 186,000 B.t.u. with entering air at 80° F. dry bulb, 67° F. wet bulb.

**Air Cleaning Medium:** See previous model.

**Suggested or List Price:** Not given.

**Control Equipment:** See Model 300-SOC.

## Fits In Attractively



Curtis store conditioner model blends in harmoniously with an office setting.

air discharge at front top. Room air circulation, 3,200 c.f.m.

**Capacity of Unit:** 87,000 B.t.u. per hour with entering air at 80° F. dry bulb, 67° F. wet bulb.

**Air Cleaning Medium:** See previous model.

**Suggested or List Price:** Not given.

**Control Equipment:** See previous model.

**Model 1000-CTAC Self-Contained Central Type**

**Dimensions:** 75½ inches high, 69 inches wide, and 33½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, circulating. Heating optional.

**Cabinet:** Same as Model 750-CTAC.

**Condensing Unit:** Curtis 10-hp., 4-cylinder "Freon-12" condensing unit driven at 590 r.p.m. Thermostatic control.

**Blower:** Multi-vane type, 2 fan wheels, driven at 520 r.p.m. by ½-hp. motor.

**Air Circulation:** Air intake at top rear, air discharge at front top. Room air circulation, 3,200 c.f.m.

**Capacity of Unit:** 87,000 B.t.u. per hour with entering air at 80° F. dry bulb, 67° F. wet bulb.

**Air Cleaning Medium:** See previous model.

**Suggested or List Price:** Not given.

**Control Equipment:** See previous model.

**Model 1500-CTAC Self-Contained Central Type**

**Dimensions:** 75 inches high, 84 inches wide, and 34 inches deep.

**Functions:** Cooling, dehumidifying, cleaning, and circulating.

**Cabinet:** Same as Model 750-CTAC.

**Condensing Unit:** Curtis 15-hp., 4-cylinder "Freon-12" compressor driven at 590 r.p.m. Thermostatic control.

**Blower:** Multi-vane type, 3 fan wheels, driven at 650 r.p.m. by 1-hp. motor.

**Air Circulation:** Air intake at top rear, air discharge at front top. Room air circulation, 6,300 c.f.m.

**Capacity of Unit:** 186,000 B.t.u. with entering air at 80° F. dry bulb, 67° F. wet bulb.

**Air Cleaning Medium:** See previous model.

**Suggested or List Price:** Not given.

**Control Equipment:** See Model 300-SOC.

**Blower:** Multi-vane type, 2 fan wheels, driven at 650 r.p.m. by a ¾-hp. motor.

**Air Circulation:** Air intake at rear top, air discharge at front top. Room air circulation, 4,200 c.f.m.

**Capacity of Unit:** 128,000 B.t.u. with entering air at 80° F. dry bulb, 67° F. wet bulb.

**Air Cleaning Medium:** Wet zone, all metal non-rusting type filter.

**Control Equipment:** See Model 300-SOC.

**Model 1500-CTAC Self-Contained Central Type**

**Dimensions:** 75 inches high, 84 inches wide, and 34 inches deep.

**Functions:** Cooling, dehumidifying, cleaning, and circulating.

**Cabinet:** Same as Model 750-CTAC.

**Condensing Unit:** Curtis 15-hp., 4-cylinder "Freon-12" compressor driven at 590 r.p.m. Thermostatic control.

**Blower:** Multi-vane type, 3 fan wheels, driven at 650 r.p.m. by 1-hp. motor.

**Air Circulation:** Air intake at top rear, air discharge at front top. Room air circulation, 6,300 c.f.m.

**Capacity of Unit:** 186,000 B.t.u. with entering air at 80° F. dry bulb, 67° F. wet bulb.

**Air Cleaning Medium:** See previous model.

**Suggested or List Price:** Not given.

**Control Equipment:** See Model 300-SOC.

**Model SC-303 Store Cooler**

**Dimensions:** 91½ inches high, 44 inches wide, and 21½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, air circulation. Heating optional.

**Cabinet:** Heavy sheet steel with two-tone brown enamel finish. Sound and heat insulated.

**Condensing Unit:** Frigidaire 3-hp., 2-cylinder "Freon-12" compressor. Thermostatic control.

**Blower:** Double inlet, centrifugal type blower, diameter 10½ inches, driven by ½-hp. motor.

**Air Circulation:** Air intake either at front or rear; air discharge at top from front, rear, or ends through adjustable vane-type grilles. Air circulation 1,200 c.f.m. Outside air intake optional.

**Cooling Surface:** Frigidaire multipath coil constructed of non-ferrous tubing and sheets.

**Heating Surface:** Frigidaire, constructed of non-ferrous tubes and sheets.

**Capacity of Unit:** Not given.

**Air Cleaning Medium:** Double, viscous coated filters.

**Suggested or List Price:** Not given.

**Control Equipment:** Thermostatic switch, on and off switch.

**Model SC-1000 Store Cooler**

**Dimensions:** 66½ inches high, 72 inches wide, and 35½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, air circulation. Heating optional.

**Cabinet:** Heavy sheet steel with angle iron reinforcements.

**Condensing Unit:** Frigidaire 10-hp., 4-cylinder "Freon-12" compressor. High and low pressure switch.

**Blower:** Double inlet, centrifugal type blower, diameter 12 inches, driven by ¾-hp. motor.

**Air Circulation:** Air intake at front, air discharge at top from front, rear or ends through adjustable vane-type grilles. Air circulation, 2,000 c.f.m. Outside air intake optional.

**Cooling Surface:** Frigidaire multipath coil constructed of non-ferrous tubing and sheets.

**Heating Surface:** Frigidaire, constructed of non-ferrous tubes and sheets.

**Capacity of Unit:** Not given.

**Air Cleaning:** Six viscous coated filters.

**Suggested or List Price:** Not given.

**Control Equipment:** Water regulating valve.

**Model SC-500**

**Dimensions:** 101½ inches high, 44 inches wide, and 24½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, air circulation. Heating optional.

**Cabinet:** Heavy sheet steel with two-tone brown enamel finish. Sound and heat insulated.

**Condensing Unit:** Frigidaire 5-hp., 2-cylinder "Freon-12" compressor. Thermostatic control.

**Blower:** Double inlet, centrifugal type blower, diameter 12 inches, driven by ¾-hp. motor.

**Air Circulation:** Air intake at front, air discharge at top from front, rear or ends through adjustable vane-type grilles. Air circulation, 2,000 c.f.m. Outside air intake optional.

**Cooling Surface:** Frigidaire multipath coil constructed of non-ferrous tubing and sheets.

**Heating Surface:** Frigidaire, constructed of non-ferrous tubes and sheets.

**Capacity of Unit:** Not given.

**Air Cleaning Medium:** Double, viscous coated filters.

**Suggested or List Price:** Not given.

**Control Equipment:** Thermostatic switch, on and off switch.

**Model SC-1000 Store Cooler**

**Dimensions:** 66½ inches high, 72 inches wide, and 35½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, air circulation. Heating optional.

**Cabinet:** Heavy sheet steel with angle iron reinforcements.

**Condensing Unit:** Frigidaire 10-hp., 4-cylinder "Freon-12" compressor. High and low pressure switch.

**Blower:** Double inlet, centrifugal type blower, diameter 12 inches, driven by ¾-hp. motor.

**Air Circulation:** Air intake at front, air discharge at top from front, rear or ends through adjustable vane-type grilles. Air circulation, 2,000 c.f.m. Outside air intake optional.

**Cooling Surface:** Frigidaire multipath coil constructed of non-ferrous tubing and sheets.

**Heating Surface:** Frigidaire, constructed of non-ferrous tubes and sheets.

**Capacity of Unit:** Not given.

**Air Cleaning:** Six viscous coated filters.

**Suggested or List Price:** Not given.

**Control Equipment:** Water regulating valve.

**Model SC-500**

**Dimensions:** 101½ inches high, 44 inches wide, and 24½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, air circulation. Heating optional.

**Cabinet:** Heavy sheet steel with two-tone brown enamel finish. Sound and heat insulated.

**Condensing Unit:** Frigidaire 5-hp., 2-cylinder "Freon-12" compressor. Thermostatic control.

**Blower:** Double inlet, centrifugal type blower, diameter 12 inches, driven by ¾-hp. motor.

**Air Circulation:** Air intake at front, air discharge at top from front, rear or ends through adjustable vane-type grilles. Air circulation, 2,000 c.f.m. Outside air intake optional.

**Cooling Surface:** Frigidaire multipath coil constructed of non-ferrous tubing and sheets.

**Heating Surface:** Frigidaire, constructed of non-ferrous tubes and sheets.

**Capacity of Unit:** Not given.

**Air Cleaning Medium:** Double, viscous coated filters.

**Suggested or List Price:** Not given.

**Control Equipment:** Thermostatic switch, on and off switch.

**Model SC-303 Store Cooler**

**Dimensions:** 91½ inches high, 44 inches wide, and 21½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, air circulation. Heating optional.

**Cabinet:** Heavy sheet steel with two-tone brown enamel finish. Sound and heat insulated.

**Condensing Unit:** Frigidaire 3-hp., 2-cylinder "Freon-12" compressor. Thermostatic control.

**Blower:** Double inlet, centrifugal type blower, diameter 10½ inches, driven by ½-hp. motor.

**Air Circulation:** Air intake either at front or rear; air discharge at top from front, rear, or ends through adjustable vane-type grilles. Air circulation 1,200 c.f.m. Outside air intake optional.

**Cooling Surface:** Frigidaire multipath coil constructed of non-ferrous tubing and sheets.

**Heating Surface:** Frigidaire, constructed of non-ferrous tubes and sheets.

**Capacity of Unit:** Not given.

**Air Cleaning Medium:** Double, viscous coated filters.

**Suggested or List Price:** Not given.

**Control Equipment:** Thermostatic switch, on and off switch.

**Model SC-1000 Store Cooler**

**Dimensions:** 66½ inches high, 72 inches wide, and 35½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, air circulation. Heating optional.

**Cabinet:** Heavy sheet steel with angle iron reinforcements.

**Condensing Unit:** Frigidaire 10-hp., 4-cylinder "Freon-12" compressor. High and low pressure switch.

**Blower:** Double inlet, centrifugal type blower, diameter 12 inches, driven by ¾-hp. motor.

**Air Circulation:** Air intake at front, air discharge at top from front, rear or ends through adjustable vane-type grilles. Air circulation, 2,000 c.f.m. Outside air intake optional.

**Cooling Surface:** Frigidaire multipath coil constructed of non-ferrous tubing and sheets.

**Heating Surface:** Frigidaire, constructed of non-ferrous tubes and sheets.

**Capacity of Unit:** Not given.

**Air Cleaning:** Six viscous coated filters.

**Suggested or List Price:** Not given.

**Control Equipment:** Water regulating valve.

**Model SC-500**

**Dimensions:** 101½ inches high, 44 inches wide, and 24½ inches deep.

**Functions:** Cooling, dehumidifying, cleaning, air circulation. Heating optional.

**Cabinet:** Heavy sheet steel with two-tone brown enamel finish. Sound and heat insulated.

**Condensing Unit:** Frigidaire 5-hp., 2-cylinder "Freon-12" compressor. Thermostatic control.

**Blower:** Double inlet, centrifugal type blower, diameter 12 inches, driven by ¾-hp. motor.

**Air Circulation:** Air intake at front, air discharge at top from front, rear or ends through adjustable vane-type grilles. Air circulation, 2,000 c.f.m. Outside air intake optional.

**Cooling Surface:** Frigidaire multipath coil constructed of non-ferrous tubing and sheets.

**Heating Surface:** Frigidaire, constructed of non-ferrous tubes and sheets.

**Capacity of Unit:** Not given.

**Air Cleaning Medium:** Double, viscous coated filters.



## SELF-CONTAINED AIR CONDITIONERS

## Kauffman Air Cond. Corp.

## Type "Y" Room Cooler

Dimensions: 15 inches high, 20 inches wide, 22 inches deep.

Functions: Cooling, dehumidifying, cleaning, ventilating. Heating optional at added cost.

Cabinet: Steel, walnut grain baked enamel finish. Celotex light-weight sound insulation.

Condensing Unit: Two-cylinder, 1/2-hp. "Freon-12" unit.

Blower: Blower type.

Air Circulation: Air circulated, 180 c.f.m.

Cooling Surface: Fanned type made by Kauffman. Copper tube, copper fins.

Heating Surface: Fanned type made by Kauffman. Copper tube, copper fins.

Capacity of Unit: Cooling: 4,000 B.t.u. based on 95° entering dry bulb, 75° wet bulb; room temperature 80° entering dry bulb, 67° wet bulb.

Air Cleaning Medium: Filters.

Suggested or List Price: \$165 (retail). Control Equipment: Furnished on all units at added cost, when required.

## Type "X" Room Cooler

Dimensions: 16 inches high, 23 inches wide, 27 inches deep.

Functions: Cooling, dehumidifying, cleaning, circulating.

Cabinet: Same as above.

Condensing Unit: Two-cylinder, 3/4-hp. "Freon-12" unit.

Blower: Blower type fan.

Air Circulation: Air circulated, 220 c.f.m.

Cooling Surface: Same as above.

Heating Surface: Same as above.

Cooling Capacity: 5,700 B.t.u. under above-stated conditions.

Air Cleaning Medium: Filters.

Suggested or List Price: \$206.

Control Equipment: Same as above.

## Type "W" Room Cooler

Dimensions: 33 inches high, 33 inches wide, 18 inches deep.

Functions: Cooling, dehumidifying, cleaning, circulating.

Cabinet: Same as above.

Condensing Unit: Two-cylinder 3/4-hp. "Freon-12" unit.

Blower: Same as above.

Air Circulation: Air circulated, 250 c.f.m.

Cooling Surface: Same as above.

Heating Surface: Same as above.

Cooling Capacity: 6,000 B.t.u. under above-stated conditions.

Air Cleaning Medium: Same as above.

Suggested or List Price: \$270.

Control Equipment: Same as above.

## Type "A" Room Cooler

Dimensions: 36 inches high, 36 inches wide, 20 inches deep.

Functions: Cooling, dehumidifying, cleaning, circulating.

Cabinet: Same as above.

Condensing Unit: Two-cylinder 1-hp. "Freon-12" condensing unit.



Kauffman type 'Y' and 'X' window mounted room cooler.

Blower: Same as above.

Air Circulation: Air circulated, 325 c.f.m.

Cooling Surface: Same as above.

Heating Surface: Same as above.

Cooling Capacity: 9,000 B.t.u. under above-stated conditions.

Air Cleaning Medium: Filters.

Suggested or List Price: \$378.

Control Equipment: Same as above.

## Type "B" Room Cooler

Dimensions: 38 inches high, 36 inches wide, 20 inches deep.

Functions: Cooling, dehumidifying, cleaning, circulating.

Cabinet: Same as above.

Condensing Unit: Two-cylinder, 1 1/2-hp. "Freon-12" unit.

Blower: Same as above.

Air Circulation: Air circulated, 400 c.f.m.

Cooling Surface: Same as above.

Heating Surface: Same as above.

Cooling Capacity: 12,000 B.t.u. under above-stated conditions.

Air Cleaning Medium: Filters.

Suggested or List Price: \$459.

Control Equipment: Same as above.

## Type "C" Room Cooler

Dimensions: 42 inches high, 41 inches wide, 22 inches deep.

Functions: Cooling, dehumidifying, cleaning, circulating.

Cabinet: Same as above.

Condensing Unit: Two-cylinder 2-hp. "Freon-12" condensing unit.

Blower: Same as above.

Air Circulation: Air circulated, 600 c.f.m.

Cooling Surface: Same as above.

Heating Surface: Same as above.

Cooling Capacity: 18,000 B.t.u. under above-stated conditions.

Air Cleaning Medium: Filters.

Suggested or List Price: \$750.

Control Equipment: Same as above.

## Model 20 Store Cooler

Dimensions: 84 inches high, 36 inches wide, 21 inches deep.

Functions: Cooling, dehumidifying, cleaning, and ventilating. Heating optional.

Cabinet: Steel cabinet, walnut (solid) finish. Celotex light sound insulation.

Condensing Unit: Two-cylinder, 2-hp. "Freon-12" unit.

Blower: 10-inch blower powered by 1/2-hp. motor.

Air Circulation: Air delivery, 800 c.f.m.

Cooling Surface: Kauffman finned type, copper fins on copper tube.

Heating Surface: Kauffman finned type.

Capacity of Unit: 25,000 B.t.u., based on 95° entering dry bulb, 75° wet bulb; room temperature 80° entering dry bulb, 67° wet bulb.

Air Cleaning Medium: Filters.

Suggested or List Price: \$890.

Control Equipment: Temperature control furnished.

## Model 30 Store Cooler

Dimensions: 86 inches high, 37 inches wide, 23 inches deep.

Functions: Cooling, dehumidifying, cleaning, ventilating. Heating optional.

Cabinet: Same as Model 20.

Condensing Unit: Two-cylinder 3-hp. "Freon-12" unit.

Blower: 10-inch blower powered by 1/2-hp. motor.

Air Circulation: Air delivery, 1,250 c.f.m.

Cooling Surface: Same as Model 20.

Heating Surface: Same as Model 20.

Capacity of Unit: 37,900 B.t.u. under above-stated conditions.

Air Cleaning Medium: Filters.

Suggested or List Price: \$995.

Control Equipment: Same as Model 20.

## Model 50 Store Cooler

Dimensions: 88 inches high, 42 inches wide, 23 inches deep.

Functions: Cooling, dehumidifying, cleaning, ventilating. Heating optional.

Cabinet: Same as Model 20.

Condensing Unit: Four-cylinder, 5-hp. "Freon-12" unit.

Blower: Two 10-inch blowers powered by 1/2-hp. motor.

Air Circulation: Air delivery, 2,000 c.f.m.

Cooling Surface: Same as Model 20.

Heating Surface: Same as Model 20.

Capacity of Unit: 62,200 B.t.u. under above-stated conditions.

Air Cleaning Medium: Filters.

Suggested or List Price: \$1,396.

Control Equipment: Same as Model 20.

## Model 75 Store Cooler

Dimensions: 93 inches high, 74 inches wide, 32 inches deep.

Functions: Cooling, dehumidifying, cleaning, ventilating. Heating optional.

Cabinet: Same as Model 20.

Condensing Unit: Four-cylinder, 7 1/2-hp. "Freon-12" unit.

Blower: Two 12-inch blowers powered by 1/2-hp. motor.

Air Circulation: Air delivery, 3,000 c.f.m.

Cooling Surface: Same as Model 20.

Heating Surface: Same as Model 20.

Capacity of Unit: 88,800 B.t.u. under above-stated conditions.

Air Cleaning Medium: Filters.

Suggested or List Price: \$2,330.

## Model 100 Store Cooler

Dimensions: 93 inches high, 79 inches wide, 32 inches deep.

Functions: Cooling, dehumidifying, cleaning, ventilating. Heating optional.

Cabinet: Same as Model 20.

Condensing Unit: Four-cylinder, 10-hp. "Freon-12" unit.

Blower: Two 12-inch blowers powered by 1-hp. motor.

Air Circulation: Air delivery, 4,000 c.f.m.

Cooling Surface: Same as Model 20.

Heating Surface: Same as Model 20.

Capacity of Unit: 114,000 B.t.u. under above-stated conditions.

Air Cleaning Medium: Filters.

Suggested or List Price: \$2,725.

Control Equipment: Same as Model 20.

## Model 150 Store Cooler

Dimensions: 98 inches high, 84 inches wide, 32 inches deep.

Functions: Cooling, dehumidifying, cleaning, ventilating. Heating optional.

Cabinet: Same as Model 20.

Condensing Unit: Four-cylinder, 15-hp. "Freon-12" unit.

Blower: Two 15-inch blowers, powered by 1 1/2-hp. motor.

Air Circulation: Air delivery, 6,000 c.f.m.

Cooling Surface: Same as Model 20.

Heating Surface: Same as Model 20.

Capacity of Unit: 183,000 B.t.u. under above-stated conditions.

Air Cleaning Medium: Filters.

Suggested or List Price: \$3,269.

Control Equipment: Same as Model 20.

## Remington Air Conditioning Co., Inc.

## Model 51—Room Air Conditioner

Dimensions: 27 inches high, 30 inches wide, and 15 inches deep.

Functions: Cooling, dehumidifying, cleaning, circulation, and ventilating.

Cabinet: Insulated electro-granodized pressed steel cabinet. Chestnut-brown finish with bronze mouldings.

Condensing Unit: Remington 2-cylinder 1/2-hp. "Freon-12" compressor.

Blower: Multiblade blower, 9 inches in diameter, driven by 1/40-hp. motor.

Air Circulation: Air intake in upper portion at left side panel. Discharge at top through 4-way outlets. Smoke removal damper for 300 c.f.m. Ventilation adjustable, 0 to 60 c.f.m. of outside air.

Cooling Surface: Tin-plated copper tubes and copper fins.

Capacity: 6,000 B.t.u. based on 95°-75° outside, 80°-67° inside, with 40 c.f.m. outside air.

Air Cleaning: Spun-glass "Dustop" filter.

Control Equipment: Thermostatic expansion valve. Switches for independent operation of compressor and fan motors.

## Model 75—Room Air Conditioner

Dimensions: 37 inches high, 32 inches wide, 16 1/2 inches deep.

Functions: Cooling, dehumidifying, cleaning, circulation, and ventilating.

Cabinet: Insulated electro-granodized pressed steel cabinet. Grained walnut finish with bronze mouldings.

Condensing Unit: Remington 2-cylinder 3/4-hp. "Freon-12" compressor.

Blower: Centrifugal fan 8 inches in diameter, driven by 1/40-hp. motor.

Air Circulation: Air intake in upper portion of right side panel. Discharge at "nose" of unit through duplex 4-way outlets. Circulation adjustable from 150 to 300 c.f.m. Smoke removal damper.

Cooling Surface: Same as Model 51.

Heating Surface: Optional 1,500-watt "Fin Calrod" electric heaters.

Capacity: 8,000 B.t.u. cooling based on 95°-75° outside, 80°-67° inside, with 60 c.f.m. outside air, 5,100 B.t.u. heating.

Air Cleaning: Spun-glass "Dustop" filter.

Control Equipment: Thermostatic expansion valve, switch for independent operation of compressor and fan motors, fan speed rheostat, optional thermostat for cooling and heating.

Model 310—Store Conditioner

Dimensions: 84 inches high, 38 inches wide, and 21 inches deep.

Functions: Cooling, dehumidifying, cleaning, circulation, and ventilating. Heating and humidification optional.

Cabinet: Completely insulated electro-granodized steel cabinet. Metallic tan lacquer with brown and chromium.

Condensing Unit: Remington 2-cylinder 3-hp. "Freon-12" at 1,750 r.p.m.

Blower: Two double-inlet pressed steel centrifugal fans, 8 1/2 inches in diameter. Blower speed, 1,020 r.p.m., 1/4-hp. motor.

Air Circulation: Air intake in center of front panel. Discharge at top front, back, or sides. Outside air connection optional. Air circulated: 1,110 c.f.m.

Cooling Surface: Tin plated copper tubes with aluminum fins.

Heating Surface: Optional hot water or steam heating coil made of tin-plated copper tubes with aluminum fins.

Capacity of Unit: 37,200 B.t.u. cooling, 79,000 B.t.u. heating. Based on entering air at 80° dry bulb and 68° wet bulb for cooling, or 5 lbs. of steam and entering air at 65° for heating.

Humidification: Optional evaporative pan-type humidifier.

Air Cleaning Medium: Three spun-glass "Dustop" filters.

Control Equipment: Thermostatic expansion valve, water regulating valve, dual pressurestat, switch for independent operation of fan and compressor motors, thermostat for control of cooling.

Model 400—Store Conditioner

Dimensions: 84 inches high, 38 inches wide, and 21 inches deep.

Functions: Cooling, dehumidifying, cleaning, circulation and ventilating. Heating and humidification optional.

Cabinet: Completely insulated electro-granodized steel cabinet. Metallic tan lacquer with brown and chromium.

Condensing Unit: Remington 2-cylinder 3-hp. "Freon-12" at 1,750 r.p.m.

Blower: Two double-inlet pressed steel centrifugal fans, 8 1/2 inches in diameter. Blower speed: 1,215 r.p.m., 1/4-hp. motor.

Air Circulation: Air intake in center of front panel. Discharge at top front, back, or sides. Outside air connection optional. Air circulated: 1,325 c.f.m.

Cooling Surface: Tin plated copper tubes with aluminum fins.

Heating Surface: Optional hot water or steam heating coil made of tin-plated copper tubes with aluminum fins.

Capacity of Unit: 43,200 B.t.u. cooling, 90,000 B.t.u. heating. Based on entering air at 80° dry bulb and 68° wet bulb for cooling, or 5 lbs. of steam and entering air at 65° for heating.

Humidification: Optional evaporative pan-type humidifier.

Air Cleaning Medium: Three spun-glass "Dustop" filters.

Control Equipment: Thermostatic expansion valve, water regulating valve, dual pressurestat, switch for independent operation of fan and compressor motors, thermostat for control of cooling.

Model 510—Store Conditioner

Dimensions: 90 inches high, 48 inches wide, and 21 inches deep.

Functions: Cooling, dehumidifying, cleaning, circulation and ventilating. Heating and humidification optional.

Cabinet: Completely insulated electro-granodized steel cabinet. Metallic tan lacquer with brown and chromium.

Condensing Unit: Remington 4-cylinder 5-hp. "Freon-12" at 1,750 r.p.m.

Blower: Three double-inlet pressed steel centrifugal fans, 8 1/2 inches in diameter. Blower speed: 1,020 r.p.m., 1/4-hp. motor.

Air Circulation: Air intake in center of front panel. Discharge at top front, back, or sides. Outside air connection optional. Air circulated: 1,800 c.f.m.

Cooling Surface: Tin plated copper tubes with aluminum fins.

Heating Surface: Optional hot water or steam heating coil made of tin-plated copper tubes with aluminum fins.

Capacity of Unit: 61,200 B.t.u. cooling, 122,000 B.t.u. heating. Based on entering air at 80° dry bulb and 68° wet bulb for cooling, or 5 lbs. of steam and entering air at 65° for heating.

Humidification: Optional evaporative pan-type humidifier.

Air Cleaning Medium: Three spun-glass "Dustop" filters.

Control Equipment: Thermostatic expansion valve, water regulating valve, dual pressurestat, switch for independent operation of fan and compressor motors, thermostat for control of cooling.

Model 600—Store Conditioner

Dimensions: 90 inches high, 48 inches wide, and 21 inches deep.

Functions: Cooling, dehumidifying, cleaning, circulation and ventilating. Heating and humidification optional.

Cabinet: Completely insulated electro-granodized steel cabinet. Metallic tan lacquer with dark brown trimming and chromium mouldings.

Condensing Unit: Remington 4-cylinder 5-hp. "Freon-12" at 1,750 r.p.m.

Blower: Three double-inlet pressed steel centrifugal fans, 8 1/2 inches in diameter. Blower speed: 1,020 r.p.m., 1/4-hp. motor.

Air Circulation: Air intake in center of front panel. Discharge at top front, back, or sides. Outside air connection optional. Air circulated: 1,800 c.f.m.

Cooling Surface: Tin plated copper tubes with aluminum fins.

Heating Surface: Optional hot water or steam heating coil made of tin-plated copper tubes with aluminum fins.

Capacity of Unit: 61,200 B.t.u. cooling, 122,000 B.t.u. heating. Based on entering air at 80° dry bulb and 68° wet bulb for



# Air Conditioning Retailer Analyzed

**R. J. O'Brien Draws Verbal Portrait of  
Successful Air Conditioning Dealer**

By Henry Knowlton

SYRACUSE, N. Y.—What makes a good air conditioning dealer? Why does one dealer succeed and another fail? Why do some dealers make good profits and others just squeak along? Prompted by the alarming mortality among air conditioning dealers in 1938, R. J. O'Brien, market analyst for Carrier Corp., set out to find the answer to these questions. His findings after an intimate study of many dealer operations, were made public at the recent Carrier convention here.

In setting forth the results of his studies, Mr. O'Brien pointed out that while a definite set of rules, or business methods, had been established for many types of business, no established practice had been formulated for air conditioning. In drawing a picture of "what makes a good dealer," Mr. O'Brien eliminated dealers who failed for obvious causes—lack of capital, relatives on the payroll, and over-expanded contracting operations.

## SOCIAL LIFE IS INVALUABLE ASSET

Mr. O'Brien found that a "good dealer"—on the average, anyway—had an active social life. While some dealers interviewed claimed that social events were a "waste of time," the best dealers made many valuable friends and contacts through churches, lodges, clubs, community functions, sports programs, luncheon clubs, and other social affairs. From Mr. O'Brien's conclusion, it is not necessary to sacrifice social life to business success.

A broad public life was found to be equally important. Frequent contacts with architects, engineers, contractors, and utilities—all directly interested in air conditioning—were recommended. Participation in local politics, city code affairs, the chamber of commerce, acquaintance with the local newspaper, better business bureau, and other public institutions paved the way to valuable acquaintances.

## VERSATILITY IS IMPORTANT FACTOR

Mr. O'Brien found the successful dealer to be a "many-sided" man, with relation to his own business. To make the business go as it should, it is necessary to be a planner, organizer, manager, market student, educator, salesman, credit man, publicist, and service man.

Indicating the importance of a "broad base," Mr. O'Brien pointed out how the successful dealer is able to sell not only installed air conditioning jobs, but commercial refrigeration, packaged air conditioning units, residential heating, industrial heating, and service contracts. In all semi-contracting work, the important thing is to reduce the "gambling" items—such as labor, as opposed to material costs, which are well established, he said.

Out of the average dealer's dollar, 75% goes into job costs, and 25% is gross profit. Of the 75% job cost, some 45% is material, Mr. O'Brien found. The sale of packaged air conditioning is tending to increase this percentage, thus reducing the "gambling" items.

## GROSS MARGIN SPLIT THREE WAYS

Mr. O'Brien divided the "gross margin" into indirect labor costs—such as waiting time, delays, etc.; direct selling expenses—including salesmen, engineers, travel, and advertising; and administrative expense—owner's salary, and net profit.

To make his business pay dividends, the dealer has many items to watch, Mr. O'Brien found. These include indirect sales expense, inventory losses, unabsorbed construction expense, and too much service. On the important question of the ratio of drawing accounts to sales, successful dealers paid approximately 40% of the salesman's income in

salary, and 60% in earned commissions.

The speaker pointed out that good engineers were cheaper than poor ones, and would have a lower over-all cost in the long run.

Other items which might either constitute "leaks" or be limited to correct proportions of a balanced business were executive salaries, clerical hire, auditors, lawyers, rent, light, heat, power, communication, stationery, bad debts, taxes, insurance, and depreciation on property. After all these items are taken into consideration, the "good dealer" finds the important item—net profit.

## Ventilators Benefit Crew on Lake Tug

CHICAGO—Officers and men on the lake tug "Ashland" can now eat and sleep in a comparatively clean atmosphere since 14 Carrier window ventilators were installed by Air Comfort Corp. to protect the tug's living quarters from the dirty atmosphere of the Calumet Ship Yards.

J. G. Thomas, in charge of packaged air conditioning equipment for the distributor, reports that serious ventilation and air cleaning problems exist on the boats that ply the Chicago water front and that he expects this sale will open a new market for window ventilators.

## Gets Locker Contract

CEDAR RAPIDS, Iowa—Polehna Bros. & Co. has awarded a contract for remodeling a building and installing a 200-locker frozen food storage plant.

## Air Conditioning Is Boon To Patients Undergoing Deep Therapy Treatments

ST. LOUIS—Comfort for patients undergoing deep therapy treatments is provided by a General Electric air conditioning unit in the clinic of Dr. Edwin C. Ernst, located in the Beaumont Medical Building here. Absolute control of temperature and humidity is essential, Dr. Ernst has found, in the room where deep therapy is used.

This room is constructed of heavy concrete, lined with lead sheets, and finished with vitreous tile on the inside. Purpose of this tile is cleanliness, and to provide a cheerful, decorative interior.

The General Electric room cooling unit, equipped with a remote compressor, is located at one side of the room, near the window. This unit supplies cold air, heated air, and contains a humidifier. Control is both manual and automatic.

The massive door of the deep therapy room is equipped with a

special periscope, so that the attending physician or technician can watch the interior without danger from the powerful rays. Another periscopic arrangement, through the floor, makes it possible to watch the General Electric X-ray equipment operating in the room immediately below.

Dr. Ernst reports that he has found that treatments in a cheerful, comfortable room, obtains the best cooperation of patients, and that air conditioning aids them in undergoing the deep therapy treatment.

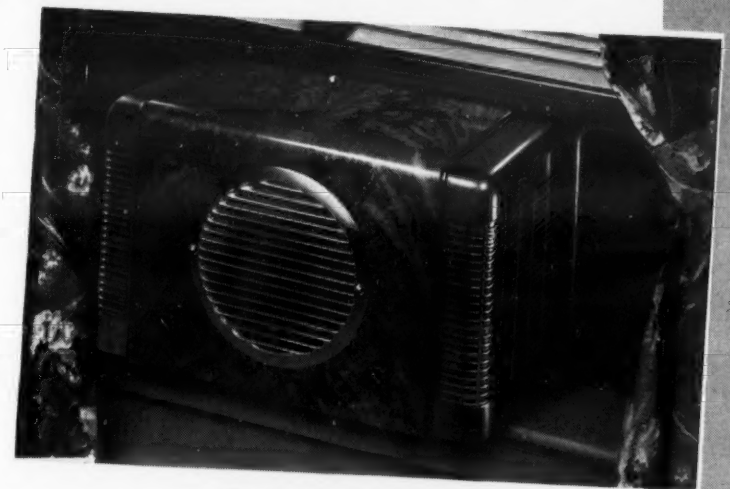
## 'Lab' Refrigerator

NEW ORLEANS—Installation of a new 35-cu. ft. Frigidaire refrigeration unit in the bacteriological laboratory of Touro Infirmary has been completed by Wands, Inc. to replace 9-foot model 13 years old.



**"Boost Summer Profits with  
*Gale*  
Mountainaire  
The Air Conditioner for average size rooms"**

- The 6100 B.T.U. LAKE LOUISE Model C-50 unit provides amazing performance! DeLuxe streamlined, wood-grained steel cabinet harmonizes with decorative schemes of fine homes and offices. Both models provide true air conditioning economically . . . filter, de-humidify, cool and circulate the air. This year air conditioning sales will be greater than ever. Will you get your share? GALE can tell you how YOU can boost profits with these easy to sell units—write for facts.



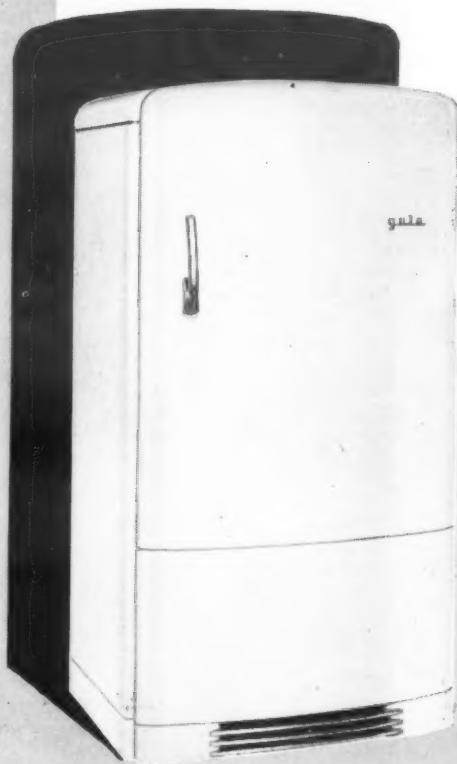
The LAKE LOUISE

- Thoroughly proved by four years of successful selling, Gale Portable Air Conditioning Units are a welcome source of extra sales and profit to dealers everywhere. Now you can get into the profitable air conditioning market without an expensive engineering and installation staff. GALE units fit snugly on window sills, plug into light sockets. No plumbing or special wiring. This 4700 B.T.U. LAKE PLACID Model G5TR retails at a surprisingly moderate price, air conditions bedrooms and small offices.



The LAKE PLACID

*Gale gives  
'Extras'  
AT NO EXTRA COST*



- DOUBLE—TRIPLE—AND MORE! Gale Refrigerators are smashing all sales records—still on the way UP! YOU can make more money on electric refrigerators by giving prospects more, the Gale way. But—get the facts and order now. Cash in on the extras!

**GALE  
PRODUCTS  
GALESBURG, ILLINOIS**

REFRIGERATION DIVISION: Outboard, Marine & Manufacturing Company

GALE Products  
1635 Monmouth Blvd.  
Galesburg, Illinois

Gentlemen:

I want to know how Gale Portable Air Conditioning Units can boost my profits. Send full information.

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

STATE \_\_\_\_\_

Include facts on Gale electric refrigerators ☐



## AIR CONDITIONING & REFRIGERATION NEWS

Trade Mark registered U. S. Patent Office;  
Established 1926 and registered as  
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F. M. COCKRELL, Founder

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## You Can Help Your Manufacturer Get Materials

**P**RIORITIES, as nearly everyone in the industry knows, is the biggest word in the news today. "Priorities," put simply, means that:

- (1) In time of war there aren't enough materials to go around; and so
- (2) Someone with governmental authority has to parcel out these materials.
- (3) Munitions makers get first call,
- (4) Followed by manufacturers of items needed by the army and navy for their living facilities,
- (5) Followed by manufacturers of goods deemed vital to public health or safety,
- (6) Followed by other manufacturers.

It should be noted that some manufacturers would fall into several or all of the above classifications. In that case, the supplies they receive are earmarked for the purposes to which the government wants them put.

Now such manufacturers, for the most part, realize that their regular customers' needs are just as important to them now during the temporary sellers' market as they will be in the future.

They know, however, that their customers in the refrigeration industry, do not fully realize the hardships such manufacturers are having in securing raw materials for apparatus that is shipped to refrigeration people.

*These hardships could be materially lessened if refrigeration customers could tell manufacturers where the products they sell finally go.*

Take the motor makers, for example. When they ship motors to a plant which is turning out "defense" products or machine tools, the motor maker secures the priority number and the contract number, and is assured of enough material to fill the order.

However, when the motor maker fabricates motors out of material previously bought, sells such motors to commercial refrigeration people—and there loses sight of its ultimate use—he must scramble to get this material

replaced. Nor can he be sure it will be replaced.

Hence, distributors and dealers can help manufacturers get more raw materials and supplies by promptly reporting all sales to cantonments and plants having defense orders. Such reports will help the manufacturer of commercial refrigeration equipment, plus the manufacturers of component parts, secure more raw materials so that they can make more things for the refrigeration industry.

The individual dealer or jobber may protest:

"But my sales are just a drop in the bucket. They're hardly worth reporting."

Many drops of water make the mighty ocean, though, and unless each dealer or jobber reports the ultimate destination of his sales when they go to some spot involved in the rearmament program, no appreciable totals can be turned in by manufacturers seeking better priority ratings on raw materials.

This problem is beginning to become serious. What's more, there is every reason to believe it will become more and more acute with every passing month.

## No Profiteering This Time

**T**HIS war is not being promoted by business men. The National Association of Manufacturers has repeatedly warned against involvement in war. So have leading industrialists such as A. W. Robertson of Westinghouse and General Wood of Sears-Roebuck.

Our involvement in the war, nevertheless, is just a matter of time—and very short time, at that.

For the record, however, many executives are not only demonstrating that they didn't favor war, but since we are getting into it, they plan to eschew extra profits.

When the war is over, and the inevitable reaction and revulsion follow, the next Nye investigation should be totally unable to pin the blame for this war on profits-greedy business men.

In this connection, two paragraphs from the Annual Report to Employees of Revere Copper & Brass, Inc., by President C. Donald Dallas, are highly interesting:

### DEFENSE PRODUCTION AND PROFITS

"Today our problem is not to sell goods but to produce them. With defense requirements increasing daily, with large demands from normal channels, and with the difficulty of securing raw materials, we are hard pressed to supply the demand. When this condition exists, the question of profiteering enters peoples' minds. They remember the last great war when prices went sky-high and profits soared. Today the situation is quite different. Despite the fact that there is an unprecedented demand for our products, there has been little or no advance in price. Despite the fact that we must have unprecedented amounts of money on hand to purchase metals and supplies, to meet payrolls, and the like—even though some of this must be borrowed—we make no extra charge for this in the way of higher prices to our government or other customers.

## They'll Do It Every Time . . . . . By Jimmie Hatlo



Despite soaring taxes and higher wages—prices have not gone up. This means there has been no profiteering. Revere employees and management have been doing their part in the Defense Program. Profits have been possible through increased efficiency and increased production.

### ABOUT THE FUTURE

"I wish that I were prophet enough to tell what the future holds for all of us. We know that someday this emergency will be over. When we come out of it there will be facilities for producing goods far in excess of the nation's ability to consume—there will be competition between materials, products, and services, such as we have never before witnessed or experienced. In order that Revere may keep its place in the industry we are continuing with our research work to develop new products that may provide additional outlets for our production facilities; we are going ahead with sales promotion and development plans; we are continuing our advertising to the public and to industry. In connection with improvements in methods and products, we welcome suggestions from our workers in all departments of Revere, as well as from those people in Research and other departments whose particular jobs fall in this category."

## LETTERS

### BOMBAY DISTRIBUTOR LOOKS TO AMERICA

Ahmed A. Fazelbhoj  
21, Queen's Road,  
(Opp. Charni Road Station)  
Bombay, 4

#### Distributors of:

Supplies for the Refrigeration & Air Conditioning Trade: Domestic Refrigerators, Water Coolers, Soda Fountains, Ice Cream Cabinets, Ice Cream Cups & Caps for Dairy Bottles, Electric Motors, Condensing Units, Tools & Fittings, Copper Tubing, Gauges, V-Belts, Neon Sign Transformers.

The Business News Publishing Co.  
5229 Cass Ave.  
Detroit, Mich.  
U. S. America.

Dear Mr. Taubeneck:

I have just now received your letter of Nov. 18, which was sent by China Clipper Airmail.

It was really splendid of you to write so comprehensively, giving all the information about the products in which I was interested. The information given by you is so complete that I can start negotiations without wasting any further time, which otherwise would have been too much. This saving of time would speed up my negotiations with the manufacturers of the products concerned, and will lead to much quicker business.

I do not know what I would have done without this valuable information.

I thank you again most sincerely for your letter and I hope one day I would be able to reciprocate your good turn. No doubt American enterprises, by these forward methods, have become World leaders in Trade, Commerce, and Industries.

Wishing you all success, and to your Paper also.

AHMED A. FAZELBHOJ

### WHY NOT SEAL TUBING UNDER PRESSURE?

1437 Worth St.  
West York, Pa.

Editor:

I have read the NEWS for a number of years and look forward to the day when it arrives. In fact, I read it before I open my checks, and that's news.

I read with interest the article in the Feb. 26 issue written by P. B. Reed who sums up the service problem pretty well.

I have been in the commercial service field for 13 years and to this day we receive new tubing sealed under a vacuum. Is there no way this tubing could be sealed under a gas or even a dry air pressure, to eliminate moisture from entering the system on the installation?

We handle the complete Kelvinator line and business in York is very good.

Wishing you much success during the coming year.

CHESTER R. HEIDLEBAUGH

### 'GLAD TO SEE PATENTS RESUMED'

Scott Engineering Co., Ltd.  
Refrigeration Equipment  
594 Runnymede Rd.  
Toronto, Can.

Editor:

We are pleased to see you are publishing Refrigeration Patents again, as we have greatly missed these in the past.

We all agree, I am sure, that the refrigeration industry is one of the most progressive. Patents have played a very vital part in its growth, the publication of such is part of the service rendered by the NEWS to the Industry.

We are glad this feature has been resumed, and we hope will be continued.

Thanking you for your active efforts to bring "Better" NEWS to us all, we remain

SCOTT LINDSAY

### MANUAL NO. 3 HAS THE DOPE

Albert E. Stitt Co.  
Hastings, Neb.

Editor:

We have a Majestic refrigerator Model 100, 012616 and the compressor motor is stuck. We would like to know if you have any service information on this or where we may obtain same.

H. A. OLSON

Answer: Information on servicing Majestic refrigerators can be found in Manual No. 3 of the Master Service Manuals of Household Refrigeration, which we publish and sell for \$1.

This manual will in all probability give you the information necessary to fix the compressor of which you speak.



## WHO'S WHO WHERE

### Hooven & Hines Named McQuigg Elected Geyer G-E Supervisors Vice President



DORSEY F. HINES

BLOOMFIELD, N. J.—Paul M. Hooven, Jr. has been appointed eastern field supervisor, and Dorsey F. Hines, western field supervisor of the General Electric air conditioning and commercial refrigeration department, it has been announced by Elliott Harrington, sales manager.

Mr. Hooven, who will make his headquarters in Cleveland, joined General Electric as a sales representative in what was then the oil furnace division of the air conditioning department. In 1940 he was appointed one of the department's district managers, with headquarters at Lancaster, Pa., the position he held until his present appointment.

Mr. Hines, who will maintain headquarters in Kansas City, was one of the first G-E refrigeration distributors, having opened his firm in Baltimore around 1927. He remained a distributor until 1936 when he was made district manager of General Electric Supply Corp. at Baltimore. In the fall of 1939 he was sent out to Kansas City to take charge of the G-E air conditioning and commercial refrigeration department district in that area. He was district manager there until his new appointment.

### Leo Knight Takes Hill Line In Boston

BOSTON—Leo J. Knight has taken over distribution of C. V. Hill refrigerators and market fixtures in this territory, replacing the Boston factory branch of C. V. Hill & Co. of which he was manager. Mr. Knight had been in charge of the branch here for the past five years, and has been associated with the Hill organization for the past 10 years.

### Frank Farrell To Run Capital's Dept.

TOPEKA, Kan.—Air conditioning and heating department of Capital Electric Co., 209 E. Ninth St., has been placed under Frank Farrell, who recently joined the staff. Harry Haid manages the company.

### A. R. Floyd Appointed Dealer For Hotpoint

FAIRMONT, N. C.—A. R. Floyd has been appointed exclusive Hotpoint dealer here by General Electric Supply Co. of Raleigh, N. C.

### Boisclair Takes Illinois

BIRMINGHAM, Ala.—Hugh Boisclair, formerly Trane Co. representative here, has become manufacturer's agent for the Illinois Engineering Co.

DETROIT—John L. McQuigg has been elected a vice president of Geyer, Cornell & Newell, Inc., advertising agency, and has been appointed manager of the agency's Detroit branch.

For the past three years, Mr. McQuigg has been account executive in charge of the Nash advertising account, and will continue in this capacity. He joined the agency six years ago in its New York City office, coming from Dayton, Ohio, where he had been engaged in advertising and merchandising work for Frigidaire. Prior to that, he was advertising and merchandising manager of West Texas Utilities, Abilene, Tex.

### Palmer, Lawrence Head Trane In Birmingham

BIRMINGHAM, Ala. — Douglas Palmer and G. S. Lawrence have been named co-managers of the local district office of Trane Co. Mr. Palmer was formerly associated with Minneapolis-Honeywell, and more recently has been a representative of Hoffman Specialty Co. in Jacksonville, Fla. Mr. Lawrence was formerly connected with the Airtemp organization.

### Page Is District Chief For Anchor Co.

PITTSBURGH—F. Earl Page has been appointed district manager of Anchor Distributing Co., wholesale distributor of Crosley products in the tri-state area. He formerly had been general manager of a major appliance distributorship in Erie, Pa., and previous to that was service manager for another distributor in Pittsburgh.

### Coast Jobber Adds Mills Line

LOS ANGELES — Refrigeration Service, Inc., parts and supplies jobbing concern here, has been appointed distributor in southern California of the Mills line of condensing units.

### Ross Bryant To Manage Roos Appliances

DALLAS, Tex. — Ross W. Bryant has been appointed sales manager of the appliance department of Roos Electric Co., according to Eddie Roos, owner.

### James Nickell Takes on General Electric Line

FAIRFAX, Va.—James E. Nickell has been named General Electric dealer here.

### Geyer, Cornell & Newell Named Eureka Agency

DETROIT — Geyer, Cornell & Newell has been appointed advertising agency for Eureka Vacuum Cleaner Co.

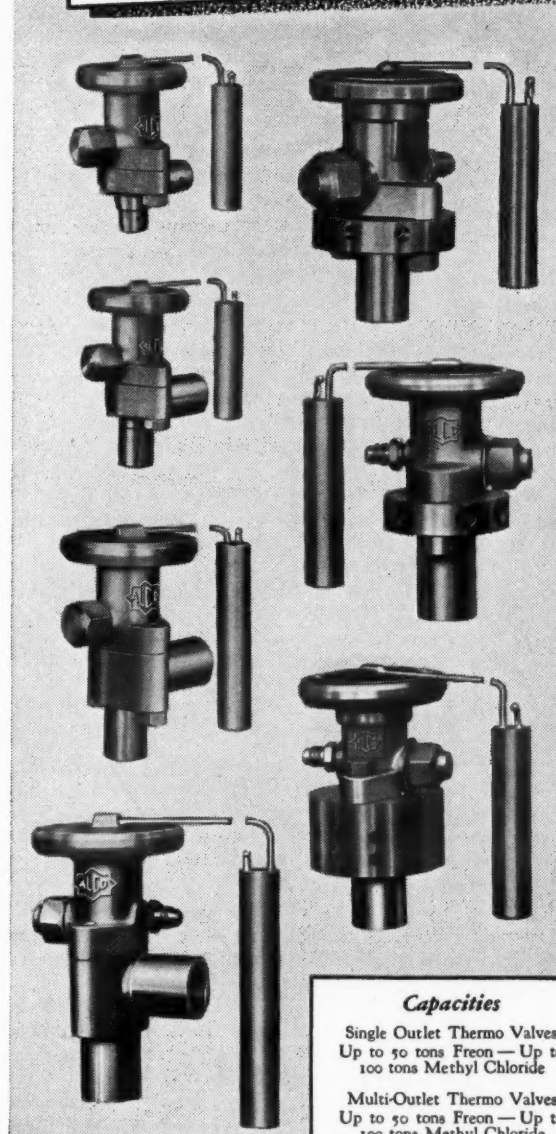
### Crosley Names Bowman

RICHMOND, Va.—Louis O. Bowman, Inc. has been named distributor for the complete Crosley line.

## These Leading Manufacturers of Air Conditioning Equipment

AMERICAN CAR & FOUNDRY COMPANY  
BAKER ICE MACHINE COMPANY, INC.  
BALTIMORE AIR COIL COMPANY  
BUSH MANUFACTURING COMPANY  
CHRYSLER CORP. (AIRTEMP DIV.)  
CURTIS REFRIGERATING MACHINE CO.  
FAIRBANKS, MORSE & COMPANY  
FRICK COMPANY, INC.

GENERAL ELECTRIC COMPANY  
GOVERNOR CORPORATION  
MARLO COIL COMPANY  
McQUAY, INCORPORATED  
TROPIC AIRE, INC.  
WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY  
YORK ICE MACHINERY COMPANY



#### Capacities

Single Outlet Thermo Valves  
Up to 50 tons Freon — Up to  
100 tons Methyl Chloride  
Multi-Outlet Thermo Valves  
Up to 50 tons Freon — Up to  
100 tons Methyl Chloride  
2 to 36 outlets, depending  
on capacity

## Have Standardized on ALCO Thermo Valves

Again Alco presents striking proof of the industry's widespread recognition of the accuracy, efficiency and dependability of Alco Thermo Valves—for among their thousands of users, the above leading manufacturers of air conditioning equipment have *standardized* on Alco equipment.

From self-contained room coolers to the largest air conditioning installations, Alco Thermo Valves are proving their superiority under all conditions. They are daily demonstrating their ability to increase efficiency and improve the performance of any system.

Alco engineering and design, plus highest quality materials and precision construction, have made Alco Thermo Valves the standard of the industry today. For complete information on *all* the advantages of Alco Engineered Refrigerant Controls, consult your Alco jobber or write direct.

**ALCO VALVE COMPANY**  
2620 Big Bend Blvd. St. Louis, Missouri  
New York • Chicago • San Francisco • Los Angeles • Seattle



Engineered Refrigerant Controls

THE STANDARD OF THE INDUSTRY

### Wolverine Tube Moves Moody To Detroit

DETROIT—Robert F. Moody of the sales engineering staff of Wolverine Tube Co. has been transferred to the home office of the company here. For the past year, Mr. Moody has traveled in the middle western states, with headquarters in Chicago.

### Western Auto Associate Named Crosley Dealer

SHERIDAN, Ark.—Western Auto Associate Store has been appointed dealer for Crosley refrigerators and radios. Dale Elliott and C. E. Davenport are owners.

### T. O. Sandell Organizes Superior Heating

SAN DIEGO, Calif.—T. O. Sandell has organized Superior Heating & Ventilating Co. at 4215 Park Blvd.

### Minneapolis Salesmen Offered Range Prize

MINNEAPOLIS—In an effort to get all retail salesmen of electric ranges "to tell the same story" in their sales presentation, the Minneapolis Electric Appliance Dealers Association is offering \$50 for the best paper by a salesman in the employ of dealer members outlining a model presentation. The North Central Associated Electrical Industries, with which the local appliance association is affiliated, will sponsor a series of statewide meetings to encourage widespread use of the prize-winning presentation.

### Stanley Reinhertz, Buyer, Joins the Army

NEW YORK CITY — Stanley Reinhertz, buyer of major appliances for Abraham & Straus, has entered the military service.

### Economy Auto Adds S-W Refrigerators

MONTICELLO, Ark. — Economy Auto Store, operated by Wilbur White, has added the Stewart-Warner refrigerator line to provide prospects with storage space for frozen foods, which the firm feels will have increasing popularity.

### Kirby Elected Chairman of Essex League

NEWARK, N. J.—Corley Kirby, New Jersey sales manager for Frigidaire, has been elected chairman of the specialty appliance distributors division of Essex Electrical League.

### General Radio Appointed Dealer For S-W

DALLAS, Tex.—General Radio & Furniture Co., owned by George S. McGhee, has been appointed dealer for Stewart-Warner appliances.

Dependable  
High Purity  
and Dryness

Helpful  
Technical Service  
Always Available

Prompt  
Shipments  
Coast-to-Coast  
Distribution



**Artic**  
REG. U.S. PAT. OFF.

The Preferred METHYL CHLORIDE  
for Service Work

For information about nearest source of supply, write to  
THE R. & H. CHEMICALS DEPARTMENT  
E. I. DU PONT DE NEMOURS & CO. (INC.)  
Wilmington, Delaware  
or National Ammonia Division  
Frankford P. O. Philadelphia, Pa.



# Service Firm Builds Large Volume on Packaged Air Conditioning

## Murphy & Miller Trains Service Men To Specialize In Air Conditioning

By Henry Knowlton

CHICAGO—Installation and service of packaged air conditioning and all types of commercial refrigeration equipment is the sole business of Murphy & Miller, Inc., one of Chicago's largest refrigeration organizations. The business was set up a number of years ago to market refrigeration and air conditioning, but during the past two years the company has handled service and installation work exclusively.

Murphy & Miller, Inc. installs nearly all of the room coolers sold in Chicago; the company handles installation and service of beer cooling and commercial refrigeration equipment sold by the utility, and operates a large contract service department for distributors, dealers, and owners of equipment.

### ALL SERVICE—NO SALES

The active head of the company is Harvey O. Miller, who asserts that "sales and service will not mix in a large organization, if you want to do a good job of either one." Mr. Miller has been devoting his entire energies to perfecting a large and smooth functioning service company.

Perhaps the primary impression gained from a cursory inspection of the Murphy & Miller headquarters, located in a three story building on South Michigan Ave. near the Chicago loop, is one of efficiency and order. Offices, shops, and the large reception room are immaculate; the large stock room is well arranged; service men may be seen going about their business in clean uniforms with the insignia "Murphy & Miller" on the back.

On the first floor are the reception and show room; executive offices; a small bar room finished in knotty pine, used for display of beer handling equipment and for occasional parties; stock room and loading dock.

Located on the second floor are the office of James Hummer, service manager, dispatcher's office, book-keeping department; service training room, and well equipped shop. The third floor is used for storage of large sheet metal parts, and has one section devoted entirely to fitting room coolers into different types of windows.

Incoming calls are routed to anyone of several dispatchers. Some thirty-five service men who are constantly in touch with the dispatchers take the calls, and report back on the service rendered. Complete records are kept in the adjoining bookkeeping department which contains a "case history" of every job the company has ever installed or serviced.

### NO LOST PARTS

Materials used on installations are carefully checked out of stock and recorded on a large sheet printed for the purpose. Every fitting, coupling, valve, and tool taken from stock appears on this sheet, which has columns to record parts taken out, returned, used, unit cost, and total cost. All parts and tools used on one installation are first placed in a large box, turned over to the man in charge of the job, and this box must be returned when the installation is completed.

According to Mr. Miller this parts control system has saved a great deal of material that formerly was lost, or misplaced, on jobs in the field.

All installations that are under construction are chalked up on a large blackboard located adjacent to the service manager's office. This blackboard is painted with a number of forms, showing the date the installation was started, its current stage of progress, and later the date it is finished is recorded. Thus the management can get a visual picture of all installations under construction at a glance.

Service men working for Murphy & Miller are trained, and trained, and trained. A model "school room" on the second floor is equipped with long tables and benches, much in the fashion of the old fashioned country school house. Service schools are held regularly every Friday evening—attendance compulsory. Service men are trained in the fine points of handling all new equipment, and taught all the tricks of the service trade.

As an example of the thorough

training given Murphy & Miller men, the company is now using an operating "cut-away" model of a self-contained store cooling unit. Conceived by J. S. Hadad, installation superintendent, the unit was built up in M & M shops by Bill Everett, shop superintendent.

This model conditioner is equipped with controls, valves, and special piping arrangements so that the instructor can make the conditioner act up—the way it may do in the field, thus simulating conditions that will be encountered by service engineers handling units of this type.

### EXTRA GAUGES

The special unit is equipped with a high side gauge, head pressure gauge, and an extra high side gauge which shows pressure existing in the receiver. Thus it is possible to determine the difference between the actual pumping pressure and the pressure on the liquid on the receiver. It is also equipped with a suction line thermometer to record the temperature of the return gas. Another gauge shows the suction pressure on the coil.

Control of the unit is either manual, or from a room thermostat located on the panel board mounted on the front of the unit. Dial thermometers record both incoming and outgoing air temperatures.

Thermometers located in the supply and return water lines show the characteristics of the condensing medium at all times.

A special sight glass is located in the exposed liquid line, just before the solenoid refrigerant control valve. This makes it possible to observe the flow of liquid from the receiver through the system.

### TROUBLE 'MADE-TO-ORDER'

Manifold piping and valves located on the back of the unit makes it possible for the instructor to direct the refrigerant flow through the expansion valve, or directly to the coil, thus showing a flooded coil condition. The instructor can also bypass gas from the high side, direct to the low side, thereby creating a "fictitious" back pressure.

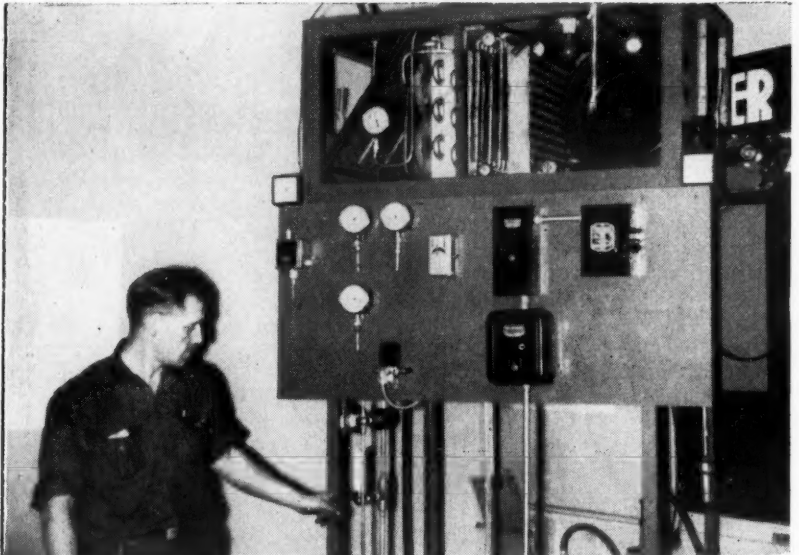
Condensing water may be bypassed to create a low head pressure, and a means has been provided to measure the condensate from the refrigerant coil. The section on top of the unit contains a cooling coil, heating coil, humidifier, filters, fan motor, and blower. Dirty filters can be installed in the unit to show what happens to the cooling capacity of the unit in such a contingency.

Both 220-volt and 110-volt wiring on the special conditioner is exposed, so that service men may be taught exactly how the wiring circuits should be installed. Signal lights located at strategic points show the flow of "juice" through the conditioner.

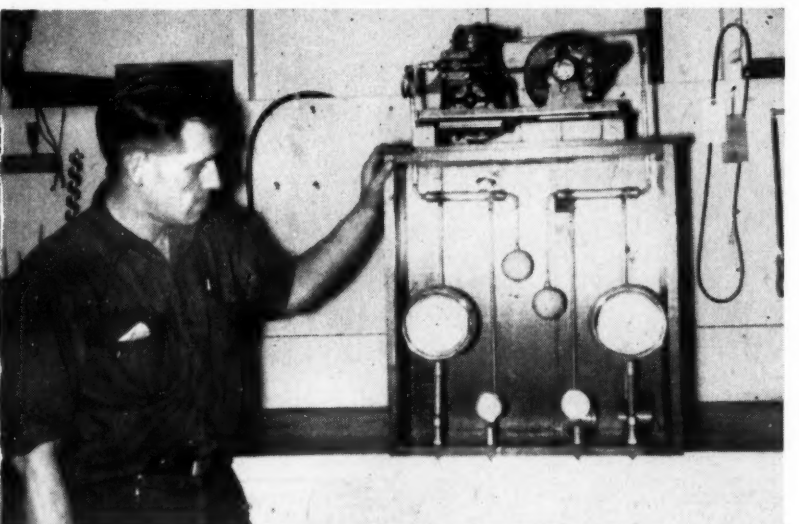
The Murphy & Miller, Inc. shop is also equipped with special apparatus for testing gauges, controls, and other instruments used in refrigeration work.



Because many Chicago executives will be "tied to their desks" through the summer by the demands of the defense program, Harvey O. Miller (left) of Murphy & Miller, Inc. tells one of his assistants what the firm is doing to prepare for a record number of room cooler installations.



This "cut-away" working model of a self-contained store cooling unit was built by Murphy & Miller to be used in the Friday night school for service men. By special valves, piping arrangements, and controls the unit can be made to simulate most troubles that occur in actual operation. Bill Everett points to a sight glass in liquid line running from the compressor, which is below.



Bill Everett, shop superintendent of Murphy & Miller, designed this gauge tester which is used by the 25 service men employed by the company. The two small gauges in the center are tested against the two large master gauges to determine their accuracy before use in the field.

**U. S. GOVERNMENT Specification**

**Filtrine**

**Cafeteria Coolers**  
Filtrine Mfg. Co., Brooklyn

## NEW SALES AND PROFITS FOR YOU!



**DISTRIBUTORS!** It isn't every day you can add a new profit line of revenue-producing equipment to your present selling set-up. Find out how you can step up your sales and profits quickly by featuring the outstanding Tuthill Ice Cream Freezer line of 1, 2½ and 5-gallon equipment, including the sensational new Tuthill Junior Ice Cream Plant. All competitively priced. Packed with exclusive selling features and backed by the most comprehensive merchandising program in the field.

Write for Franchise Facts Today.

REFRIGERATION PRODUCTS DIVISION  
**TUTHILL PUMP COMPANY**  
935 EAST 95TH STREET • CHICAGO, ILLINOIS

## Record Used To Control Material Taken From Stock

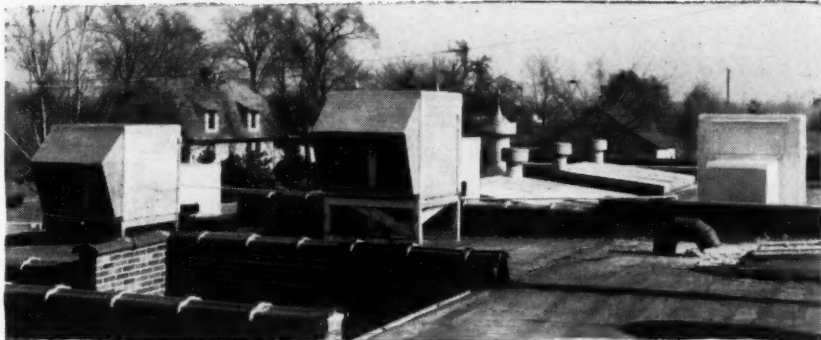
### INSTALLATION PARTS REQUISITION

DATE _____				JOB No. _____									
CUSTOMER'S NAME _____				ADDRESS _____									
PART NO.	QUANTITIES			DESCRIPTION	UNIT COST	EXT.	PART NO.	QUANTITIES			DESCRIPTION	UNIT COST	EXT.
	OUT	RET'D	USED					OUT	RET'D	USED			
				Iron-TX Valves			1082				TOOLBOX		
				Ch.3-1 TX Valves							ACKERMAN-JOHNSON		
M-294				Cook Pads 6"x6"x2"							ASSORTED NAILS		
M-290				Concrete Blocks 12"							PERFORATED STRAP IRON		
				Panel Board							BRINE PUTTY		
57882				Blow Valves							GAUGES		
M-295				Blow Taps									
M-401				1/4" Dehydrator									
M-460				1/4" Dehydrator									
M-278				1" Brass Box									
M-291				1 1/4" Brass Box									
M-277				1" Rex Couplings									
M-290				1 1/4" Rex Couplings									
M-276				1" Thruwall									
M-293				1 1/4" Thruwall									
M-328				1" Pipe Clamps									
51790				1/4" Tubing Clamps									
51788				1/4" Tubing Clamps									
51787				1/4" Tubing Clamps									
51786				1/4" Tubing Clamps									
1800				Hi-Pressure Gauge									
1807				Low-Pressure Gauge									
51189				1/4" Tubing									

All items taken from stock are checked out on a large sheet, a portion of which is shown above. A special section of the sheet, shown in insert, is devoted to tools and miscellaneous materials. After the job is completed all unused parts are checked back into stock on the same sheet.



## Evaporative Coolers Used In Multiple For Conditioning Commercial Building



Here are three Kooler-Aire evaporative cooling units built by United States Air Conditioning Corp. installed on the roof of a commercial building. Each unit supplies 7,000 c.f.m. to the building through a duct system. Fresh air enters the units through a rear intake.

### U. S. Air Conditioning Corp. Has 5 Models

MINNEAPOLIS—Evaporative type space coolers, built in five sizes, ranging from 2,500 to 10,000 c.f.m. are being marketed by the United States Air Conditioning Corp. here. Known as the "Kooler-Aire" conditioners, the units use 100% fresh air at all times, and may be installed in multiple to meet the requirements of commercial buildings.

List prices for the evaporative type cooling units range from \$160 for the 2,500 c.f.m. unit, complete with recirculating pump and adjustable grille, to \$489 for the 10,000 c.f.m. unit complete. A humidistat may be supplied with each unit, to control the action of the water assembly.

With the humidistat set at the desired point, the water will shut off automatically when the humidity

exceeds that point, but the blower will continue to operate for purposes of ventilation only, it is claimed.

Blowers used in the Kooler-Aire systems are manufactured by the U. S. Air Conditioning Corp. and are of the double inlet, double width type. Blower wheels range from 12 to 24 inches in diameter, depending on the unit size.

Cabinets are heavy galvanized construction, with exterior finish baked on. The interior is coated with baked Navy specification zinc chromate to prevent rust and corrosion.

### Medford, Wis. To Have Locker Plant

MEDFORD, Wis.—A frozen food locker plant is being erected here for George Mathews & Sons by Central Construction Co. of Medford. Architects for the plant are Ippenheimer & Obel.

## N. Y. Contractors Hold 18th Convention

SYRACUSE, N. Y.—Eighteenth annual convention of the New York State Air Conditioning Contractors Association was held at the Onondaga Hotel here recently for three days.

Sessions were opened with a welcoming address by President George Ballard, and speakers at the first luncheon included Robert Williams, chief of industries section of FHA; J. H. Van Alsburg, Hart & Cooley Register Co.; and D. D. Hamilton, Koppers Co.

Merchandisers, manufacturers, and jobbers held a stag party in the hotel's ballroom the first evening.

Dr. R. A. Wilkins, vice president of Revere Copper & Brass Co., spoke the second morning, with the afternoon guest speaker being Prof. S. Konzo, special research assistant in the mechanical engineering department of the University of Illinois.

A banquet, followed by entertainment and dancing closed the second day's meetings, and the following morning new officers were elected.

Among companies that exhibited their products on the mezzanine balcony were: Vacuum Gas Appliance Co. of Rome, N. Y.; Round Oak Co.; U. S. Register Co.; Burhams & Black; Fireline Stove & Furnace Lining Co.; Roofers Supply Co.; International Heating Corp.; David Levov Co.; Lock Former Co.; Morrison Steel Products Co.; and Aeroil Burner Co.

### Locker Plant Opened In Bremerton

BREMERTON, Wash.—Sexton's Auto Freight Co. has opened a locker plant here with Dix Sexton as manager.

## Pay Trial of Conditioners In Prospects' Homes Is Clincher of Many Sales

ST. LOUIS—A simple plan for removing the greatest sales objection in merchandising package air conditioning—the customer's fear that the unit will not function well in his own surroundings—enabled Schweig-Engel Co., Philco-York dealer here, to sell 45 additional room coolers at an average price of \$189.50 during 1940.

"Formerly we lost many sales which were almost completed," Samuel Singer, sales manager, stated, "because our own office is too large to be adequately cooled by room-size models. Prospects are pleased when testing a model in the showroom, but lack confidence in the unit's ability to cool their offices or homes."

One plan used by the company was to ask satisfied users (mostly professional men) for permission to quote them as endorsing package air conditioning. They sometimes permitted Schweig-Engel to give their telephone number to other men in the same profession. Thus, a dentist with a 10 x 14 office or waiting room could be given the name and telephone number of another dentist with a similar office so that he could telephone the latter and ask his frank opinion.

Then Schweig-Engel devised a rental plan allowing prospects to test the machine thoroughly with no "strings" attached. The offer was first made in the summer of 1940, and resulted in so large a response that Schweig-Engel was swamped for demonstrator conditioners.

Under this plan, the prospect pays the cost of hauling the conditioner, plus a \$25 rental for one month, if he does not decide to keep it. Entire amount is applied to purchase price if the prospect wishes

to buy the conditioner. The \$25 figure applies to the 1/2 and 1/4-ton models, with a similar offer of \$40 for the 3/4-ton model. Mr. Singer reported that in all but one instance every such model demonstrated was sold.

Another innovation was a "hot weather suggestion" program, carried out whenever St. Louis's already onerous summer weather hits the 99° mark.

As soon as such hot spells arrive, Schweig-Engel places a cool-voiced girl in the office with telephone and prospect list. She calls every prospect and asks him to drop into the store to look at conditioners. Since the prospect is invariably suffering with heat, response is always good, and the company realizes the opening wedge for many sales.

### February Installations Soar In Pittsburgh

PITTSBURGH—Installations of air conditioning equipment during February in the territory served by Duquesne Light Co. totaled 15 with an aggregate horsepower load of more than 1,200, compared with three installations totaling 89 hp. in the same month of 1940, reports Frank J. Mahon, secretary of the Air Conditioning Bureau of Pittsburgh Electric League.

February jobs included installation of 440 hp. to completely air condition four floors of Spear & Co.'s remodeled new store in the downtown area, 350 hp. in the new Sears store on the north side, and 350 hp. in the auditorium and offices of the H. J. Heinz Co.

## Here is what Nick Meyer said about IMPERIAL TRIPLE-SEAL FITTINGS to win the contest —

OUT of the entries in the Imperial Triple-Seal Contest the judges decided that Nick C. Meyer, Installation Supervisor of the Grauman Company of Denver, won the first prize of \$100.00. His statement about Imperial Triple-Seal Fittings and his description of the unusual installation at Carlsbad Caverns in New Mexico won him top honors in the nationwide contest.



• The winner, Nick C. Meyer, Installation Supervisor, The Grauman Company, Denver, Colo., receives award from Imperial representative, Paul C. Hathaway, while Harold McCombs, of McCombs Refrigeration Supply Co., local Imperial jobber looks on.

Here is what Mr. Meyer said about Imperial Triple-Seal Fittings:

"The Triple-Seal Fitting makes it possible to get a good tight joint without the necessity of pulling up the Flare nuts to an extent where the tubing might become twisted or the possibility of shearing off the flare. It is possible to put in a neater job in less time than with ordinary flare fittings."

"I also believe that a Triple-Seal Fitting makes a more positive seal which will eliminate loose joints and gas leak troubles for all time."

"Because you do not have to draw the fittings up tight while making the installation, it will minimize the danger of flares breaking loose due to vibration, etc., after the job has been in service."

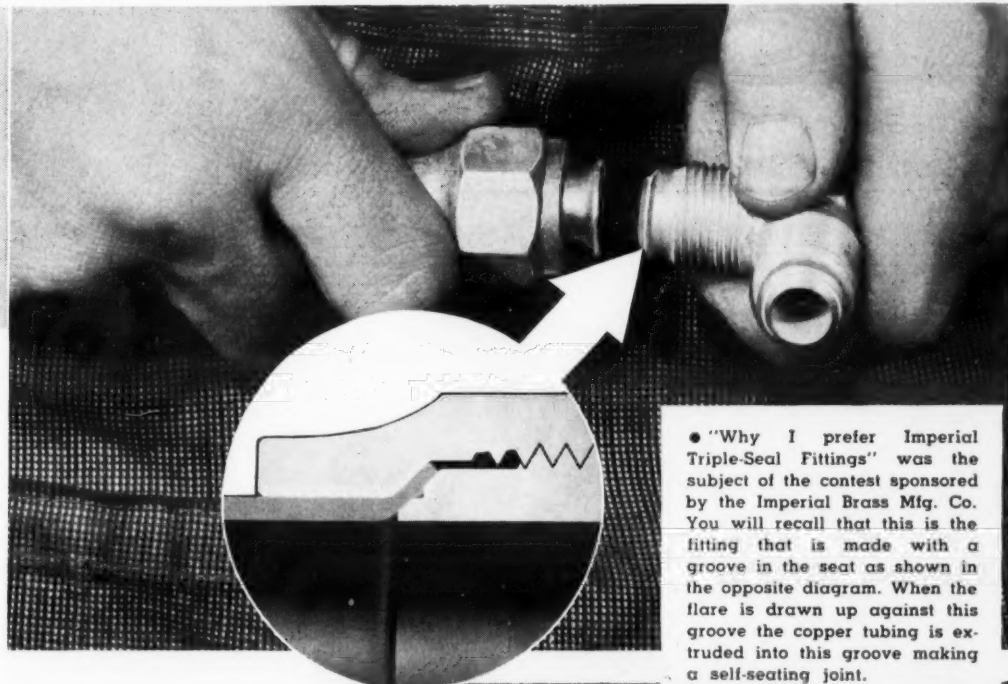
"I think this fitting has given the refrigeration service man another of the many needed improvements in the refrigeration equipment field."

Other installation and service men from coast to coast have expressed similar opinions about Imperial Triple-Seal Fittings. We believe you too will find this seemingly minor improvement in flare fittings a development of extremely practical character.

On your next job when you order fittings from your Jobber, be sure to specify Imperial "Triple-Seal." They cost no more than ordinary flare fittings.

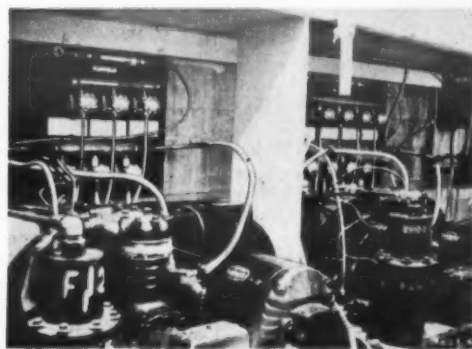
• Triple-Seal Fitting as well as all the other Imperial Products for air conditioning and refrigeration work are covered in this new 1941 condensed catalog.

ASK YOUR JOBBER FOR A COPY



• "Why I prefer Imperial Triple-Seal Fittings" was the subject of the contest sponsored by the Imperial Brass Mfg. Co. You will recall that this is the fitting that is made with a groove in the seat as shown in the opposite diagram. When the flare is drawn up against this groove the copper tubing is extruded into this groove making a self-seating joint.

• The Carlsbad Caverns, where the installation is located is recognized as the most spectacular of the natural underground wonders. One of the problems at the Caverns has been to provide adequate eating accommodations. To handle large groups quickly the Grauman Company installed a complete cafeteria located 700 ft. underground in a huge chamber 320 ft. by 100 ft. A view of this cafeteria is shown at right. This cafeteria has handled a peak load of 3700 people in three hours. Various Imperial items are also used in this installation.



• A view of the two compressors installed to handle the job, showing 14 Imperial shut-off valves, manifolds, dehydrators and arrangement of units.



• Soda fountain and luncheonette, in the Administration Building at Carlsbad Caverns, installed by Nick Meyer of the Grauman Company of Denver.

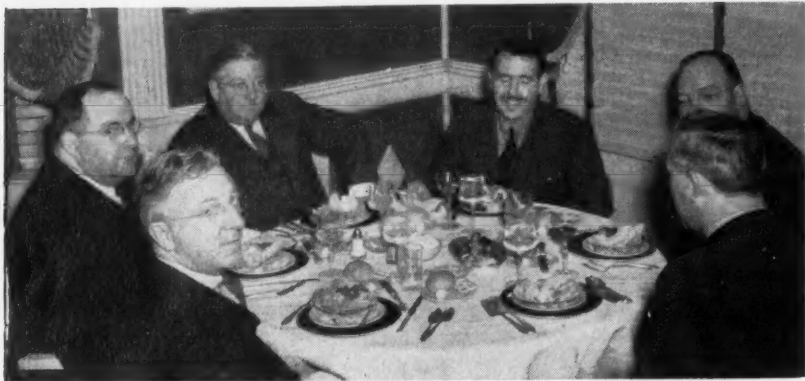
THE IMPERIAL BRASS MFG. CO., 1204 W. Harrison Street, Chicago, Illinois

# IMPERIAL

## Air Conditioning and Refrigeration Products



## R. Cooper Jr. Executives Honored



Among guests at a recent sports luncheon given by the "Chicago Tribune" were members of R. Cooper Jr., Inc., General Electric distributor. Left to right: S. B. Maher, R. D. Van Kirk, Harry Cagney, R. Cooper Jr., Charles Hobbs, all of the Cooper firm, and Harry N. King of the "Tribune."

## \$7,000 Locker Plant Begun

STONINGTON, Ill.—Rex Refrigeration Co. of Decatur, Ill. is installing a 232-locker, \$7,000 frozen food

storage plant here for Maggio and Andy Marucco. The new plant will be conveniently located next door to the Marucco grocery which is situated in Stonington's business section.

## That "RECALIBRATOR" SCREW

— a SMALL thing to look for  
... a BIG thing to find

THE "Recalibrator" screw on a Marsh Gauge identifies the kind of gauge that you can keep accurate. If it's knocked out of adjustment, just turn that screw until the pointer (with pressure or vacuum removed) rests at zero. The gauge will then be correct at all points on the scale—a basic correction that can not be made by ordinary "zero adjustments" or by the usual re-setting of the pointer.

This same "Recalibrator" is found in Marsh Dial Thermometers... just one of a long list of betterments that are combined only in Marsh Instruments.

JAS. P. MARSH CORPORATION  
2067 Southport Ave., Chicago, Ill.

**MARSH** Refrigeration  
Instruments



In addition to standard instruments Marsh offers the "Serviceman", remote reading thermometer and group of handy small portable recorders—temperature recorders, pressure recorders and operating cycle recorders... sold at a remarkably moderate price. You will see these and other interesting instruments at the Marsh booth during the 1941 Refrigeration & Air Conditioning Exhibition.

## Dealers Get 'Lowdown' On Infra-Red Sales

PHILADELPHIA—To give selling agencies a basic knowledge of infra-red, its equipment, and applications, the newly organized Infra-Red division of Electrical Association of Philadelphia recently held a one-day conference in Franklin Institute here. The conference was an all-day session, held exclusively for the selling interests in the Philadelphia area.

Invited to the conference were representatives of electrical contractors, executives and salesmen of electrical wholesalers, executives and salesmen of utilities, the paint, varnish, and ink interests, as well as representatives of infra-red equipment manufacturers. Nearly 300 persons attended the session.

Talks were purposely non-technical, with speakers using visual demonstrations wherever possible. Speakers included C. E. Russell, director of industrial promotion for Philadelphia Electric Co. and chairman of the Infra-Red division of the league; Howard Haynes, General Electric Co.; James D. Hall, Westinghouse Lamp Division; Fritz Uhlenhaut, Fostoria Pressed Steel Corp.; Paul Goodell, C. M. Hall Lamp Co.; R. H. Jack, Ault & Wiborg; Robert J. Moran, Middle Department Rating Association; J. Frank Gaskill, Philadelphia Electric Co.

Companies represented in the Infra-Red division of the League include Fostoria Pressed Steel Corp.; C. M. Hall Lamp Co.; General Electric Lamp Department; Westinghouse Lamp Division; and Philadelphia Electric Co.

## Refrigerators &amp; Ranges Led Wisconsin '40 Sales

MILWAUKEE—Refrigerators and washers led major appliance sales during 1940 in the territory of Wisconsin Power & Light Co., according to statistics compiled from dealer and utility reports.

Refrigerator sales totaled 7,921 units; washers, 5,532 units; ranges, 1,503 units; and radios, 12,049 units.

## Appliances Keep 'Em Paying

## Mortgage Expert Says Electrical Equipment Holds Mortgagees' Interest In Their Home

BRIDGEPORT, Conn.—Convenience equipment, such as electric kitchens and modern heating plants, is one of the most important factors influencing a borrower's willingness to keep up his payments, declared Donald K. Vanneman, New York mortgage correspondent of Canada Life Assurance Co. and former FHA executive, in addressing the recent Kitchen Kollege sessions of General Electric Co. held here and in St. Charles, Ill.

The financing business, explained Mr. Vanneman, makes immediately available the enjoyment or use of goods while postponing over a period of time the payment for them. The need for determining the present worth or value of an electric refrigerator, range, or dishwasher in a new home is apparent, he said, since the benefits to the owner represent one of the factors of security for repayment of money advanced.

Discussing the lending institution's problem, Mr. Vanneman pointed out that "a valuator should base his estimates on a single and typical building, and his valuation should not be prejudiced by better-than-average efficiency of a builder's operation, fortunate land purchases, etc."

The FHA system of rating physical property considers seven features: structural soundness, resistance to elements, resistance to use, livability and functional plan, mechanical and

convenience equipment, natural light and ventilation, and architectural attractiveness.

"A house which had a poorly planned kitchen, which lacked adequate arrangements for food storage, had an improper set-up for food preparation, and poor dishwashing facilities might well receive a lower rating under 'livability and functional plan,'" Mr. Vanneman pointed out. "Installation of a ventilating fan in the kitchen would improve the rating under 'natural light and ventilation.'" "At one time not so many years ago modern plumbing equipment and bathroom tile was considered special equipment and not typical in valuation," Mr. Vanneman continued. "Today its omission would be considered a departure from the typical and the property would be penalized in valuation. So we see that the 'extras' of today may be the 'typical' of tomorrow, for as people become more accustomed to expect a thing, the more it approaches the typical in appraisal practice."

Subsequent purchasers of buildings, Mr. Vanneman concluded, will be inclined to value more highly those properties which contain features satisfying to the highest degree their needs and desires. Builders frequently find that their mortgages will cover special equipment costs and consequently provide the house with greatly increased sales appeal.

When Is A Salesman Not Just A Salesman?  
- - When He Works For Mr. Welch

LOS ANGELES—Salesmen aren't salesmen when they work for the R. G. Welch Co., appliance dealership at 4533 S. Vermont here. They're a combination of independent dealers, service men, and salesmen—a combination that has proved a good sales producer.

Last year R. G. Welch's firm placed in the top three outlets for the particular line of refrigeration handled and also received the award for balanced operation. The store maintains a good ratio of sales of washing machines, dishwashers, garbage disposal units, electric ranges, and small appliances to refrigeration.

All salesmen are specialists on one major appliance line, except one man whose specialty is developing business from floor leads.

When Mr. Welch observed that his refrigeration service man was producing more sales than anyone else, and that the quality of salesmen was deteriorating under competitive hammering, he decided to find the right men and actually put them in business for themselves. They have separate listings in the city directory and separate telephones. While they may use the floor for demonstration, 90% of the sales are made in the field.

Instead of paying a 15% or 20% commission on the gross sale, Mr. Welch gives these dealer-salesmen 50% of the net profit.

Finding the right man for this unorthodox set-up is difficult, Mr. Welch admits, for the man must

know service thoroughly and still have the right personality to be a good salesman. However, two such men have been found—a refrigerator man and a vacuum cleaner man.

These men go into the field daily and work the service angle, ringing doorbells and introducing themselves as repairmen on the particular appliance they specialize on.

They have cards which feature that service, but the name of the dealership does not appear on that side of the card. Space on one side mentions a "buy" on another appliance in addition to that salesman's particular line, and the reverse side presents three appliances and the store's name. For example, the card used by the vacuum cleaner service man also features refrigerators on the front and washers and refrigerators on the reverse.

The possibility that some men might neglect the selling job to concentrate on their service work was recognized by Mr. Welch, but he believes that the "right man," properly trained, will sell appliances to boost his income, using service as "the foot in the door" to sales.

Two other aspects of this set-up, important in Mr. Welch's opinion, are that his own home is completely equipped with electricity, even for heating, so that his men can study the appliances in actual operation; and that he carries only one brand of appliances so that salesmen don't compete with themselves in plugging first for one brand and then another.

Trade-In Allowance Cut  
\$8 to \$20 By Planning

OAKLAND, Calif.—Average trade-in allowance on stoves taken in by local dealers on new ranges now runs all the way from \$2.50 to \$12.50 less than before the inauguration of a "blue book" plan seven years ago, reports the Appliance Dealers Trade Association.

Added to the hook-up charge for new equipment of \$4 to \$6, which has been in effect for about five years, this saving in trade-in allowance now ranges from \$8 to \$20 per stove, the association estimates. Since annual sales of ranges in this area average around 8,000 units, total additional annual profit can be set at between \$60,000 and \$150,000.

## Dallas Dealer Remodels

DALLAS, Tex.—H. Boedecker & Sons, appliance dealer in suburban Oak Cliff, has completed remodeling of its display and office space.

Dealers Cooperate In  
'Then & Now' Display

CHEYENNE, Wyo.—A "Then and Now" promotion in which nine Cheyenne appliance dealers compared the average home kitchen of 1918 with the 1941 version through window displays and cooperative and individual advertising was used to spark the early-spring campaign.

Promotion was based on a comparison of the old wooden icebox with today's electric refrigerator, the wood-and-coal burning kitchen stove and the modern electric range. A full-page advertisement compared typical net monthly bills for various kilowatt usages of electricity, showing, for example, that 25 kw-hr cost \$2.61 in 1918, but only \$1.33 in 1941.

Cooperating companies were: Wells Music Co., Forbes Music Co., Penney's, Cheyenne Light, Fuel & Power, Skaggs, C. H. Simpson & Sons, Montgomery Ward, Todd Jewelry Co., and Christensen's.

**The NATIONALLY ACCEPTED Trade-in MANUAL**

**Now Trade-ins mean added PROFITS**

ORIGINAL SIZE 4 1/2" x 7 1/2"

1 It lists and illustrates over 2,000 models of domestic type refrigerators so that they may be readily identified by customer and dealer. Thus all guesswork as to age or model is eliminated.

2 It gives a fair, conservative value to each model listed, and thus eliminates the danger of excessive allowances.

3 Its neat and complete make-up impresses the customer — and in general its appearance and lists serve as an effective antidote for the customer's inflated sense of value of his "trade-in." SEEING IS BELIEVING!

4 Its trade-in appraisal values are designed to let the dealer MAKE A PROFIT on his replacement sales.

5 Its complete editorial section tells the dealer how to trade profitably, how to resell the refrigerator traded — HOW TO RE-CONDITION A REFRIGERATOR.

**ORDER NOW \$3.50 EACH**

Please send at once — copies of the NATIONAL REFRIGERATOR MARKET REPORT

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Orders accompanied by check or money order will be shipped postpaid.



# Utility Records Reflect 'Where' and 'When' of Room Cooler Sales In Nation's Second City

## Greater Percentage of Residential Installations And Trend To Larger Units Shown In 1940

BY Henry Knowlton

CHICAGO—"When you sell one room cooler you sell two"—declares Don Wetherbee, supervisor of packaged air conditioning for the Commonwealth Edison Co. here. The reason for Mr. Wetherbee's observation is that he has found, and his salesmen have often been delighted to discover, that when a man buys a room cooler for his office, he often follows up with the purchase of a similar unit for his home—or vice versa.

Salesmen working for Mr. Wetherbee, who is assisted in the department by G. G. Freyder, sell room coolers, water coolers, humidifiers, and window ventilators. This makes a year-around operation, and many summer conditioning units are now sold in the off-peak season.

### Utility Sells Less, But Is Happy About It

The function of a utility in the sale of merchandise is to introduce new products, Mr. Wetherbee believes.

"Several years ago we sold half of the room coolers in Chicago," he observes, "and today we sell about 20% of all units that are marketed. The time will come when we, as a utility, sell only a small portion of the total room cooler volume."

Policy of Mr. Wetherbee's department is to obtain satisfied customers, that more room coolers may be sold in Chicago. For this reason, salesmen in the department use a "Calculation Sheet for Room Coolers," designed to give a fairly accurate idea about the heat load and conditioner size needed.

"We are following a middle of the road policy," Mr. Wetherbee said, "as we do not agree that room coolers can be merchandised by throwing caution to the winds and doing no engineering—nor do we believe that room coolers must have a load break-down of latent and sensible heat, in other words, a complete engineering application, to be successful. Our calculation sheet gives us enough information so that we can be right at least 80% of the time, and on the other 20% we might be wrong anyway."

Every sales organization must have a bell cow—and with the Commonwealth Edison packaged air conditioning department, J. F. Brown qualifies for this position, hands down. Mr. Brown says he can sell 200 room coolers this year—alone, and plans to do it.

### 'Hot' Dance Studios

Mr. Brown has a good start on the current season, and recently delivered 10 units to the Arthur Murray Studios—to be used in rooms where people learn to dance. Since this sale was made Mr. Brown has been contacting other "let-us-teach-you-to-dance" studios in Chicago, and has a number of organizations interested in the purchase of room coolers.

"When they learned that Arthur Murray Studios have air conditioning, they are all interested," Mr. Brown said.

What Mr. Brown likes to sell best, however, is industrial and business offices. "These men get accustomed to eating in air conditioned restaurants, relaxing in air conditioned theaters, and going to air conditioned clubs.—They know all about air conditioning, and it is easy to sell them comfort cooling."

Mr. Brown uses "comfort cooling" to make sales and to avoid the industry's sins of over cooling in certain theaters. He explains that he will give the prospect "just enough cooling to be comfortable"—and that's all. He also stresses the elimination of dust; the proper amount of air motion; and the dehumidifying features of room coolers.

### 'Boss Angle' Is Hurdle

The hardest hurdle to get over, Mr. Brown relates, is when an executive says he does not want to purchase a room cooler because it will accentuate the difference between "boss" and his employees, who must work in hot offices. In these cases

ness was this type of room cooler, which we believe indicated the demand for window sill models.

"One hundred and five, or 42% of the room coolers sold were discontinued models at bargain prices. They consist of coolers purchased by our company and those sold from the stock of manufacturer's distributors. Being able to offer bargains has been a great help in stimulating out of season sales."

Of the units sold by the Commonwealth Edison Co. the following is a breakdown of sales by months:

January	4
February	10
March	9
April	25
May	27
June	58
July	73
August	40
September	3

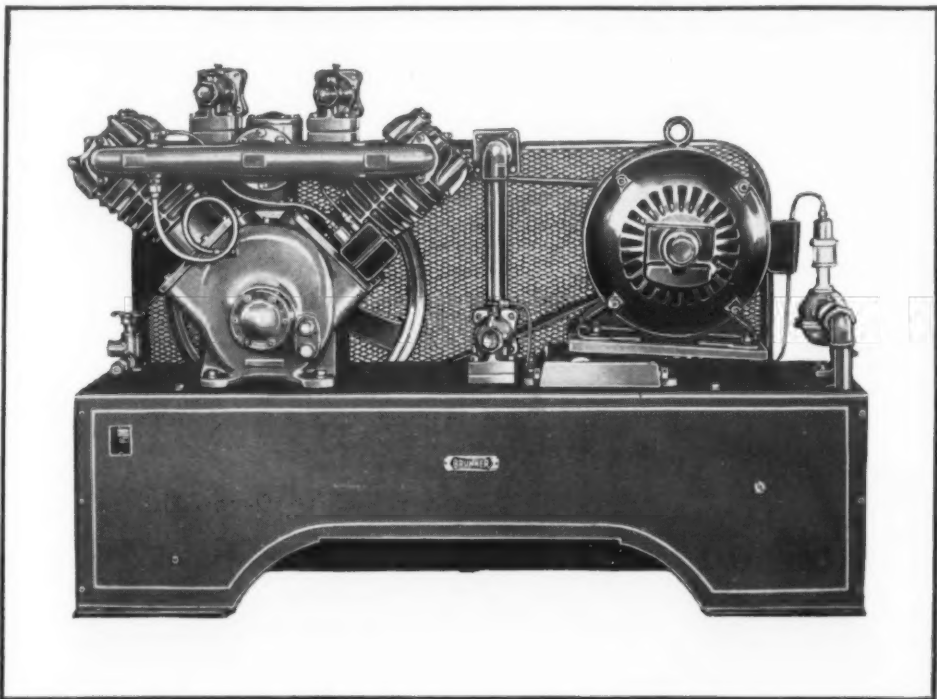
249

### Roose Is Specialist On 'Laundromat'

PITTSBURGH—John A. Roose, Jr. has been named sales specialist for the new Westinghouse Laundromat with headquarters here, announced N. I. Bickford, east central district manager for Westinghouse Electric Supply Co.



1 TODAY'S CUSTOMERS have been taught to expect air conditioning in restaurants, theatres, stores and shops. Failure to provide it may cost, in trade profits, many times the price of a Brunner unit.



2 COMPACT AND DURABLE. Brunner units are precision built to stand the gaff of severe service. Heavy duty motors, dependable controls, bronze bearings, extra heavy structural members, silent eccentric drive. Above: Brunner Model W-25,000—4 cylinders, 25 h. p. water-cooled condensing unit.

## Chicago Utility's 1940 Room Cooler Sales By Place of Installation, Make, and Size

Location of installations was as follows:

	Number Installed	% of Total
Residences	47%	
Living Rooms	18	
Bed Rooms	98	
Doctor's Offices	18%	
Physicians	25	
Dentists	21	
Business Offices	31%	
General	17	
Private	60	
Miscellaneous	4%	
Tailor	1	
Laboratory	1	
Pool Rooms	2	
Currency		
Exchange	3	
Music Studio	1	
Furrier	1	
Photograph		
Studio	1	

A breakdown of sales records by individual men shows that one man sold 87 room coolers, the second high man, 41 units; the third, 33; the next two 26 and 25 respectively, and the balance ranged from 10 conditioners down to one sale.

Sales made by the utility by listed manufacturers were:

Carrier	52	21 %
Frigidaire	11	4½ %
Gale	15	6 %
Kelvinator	16	6½ %
Philco	130	52½ %
Westinghouse	24	10 %

A breakdown of these sales by models was as follows:

Carrier		
Model 50-G	33	
Model 50-H	17	
Model 50-J	2	
Philco		
Model CA-90	28	
Model CW-60	13	
Model BA-85	19	
Model 41	20	
Model 61	37	
Model 62	1	
Model 91	12	
Model BA-100	1	
Westinghouse		
Model SA-06	6	
Model WA-04	3	
Model WA-06	13	
Model FA-09	2	
Frigidaire		
Model SC-40	5	
Model SC-81	6	
Kelvinator		
Model SCA-7600	8	
Model SCA-750	2	
Model SCA-85	2	
Model SC-7150	2	
Model SC-7100	1	
Model SC-50	1	
Gale		
Model	15	

A breakdown by capacities of Commonwealth Edison Co. room cooler sales indicated a predominant preference for models in the ½ hp. to ¾ hp. capacity. They are as follows:

½ hp.	38
¾ hp.	95
1 hp.	102
1 ½ hp.	12
2 hp.	2

# AT EASE!

## ...increase sales and profits

### WITH AIR CONDITIONING

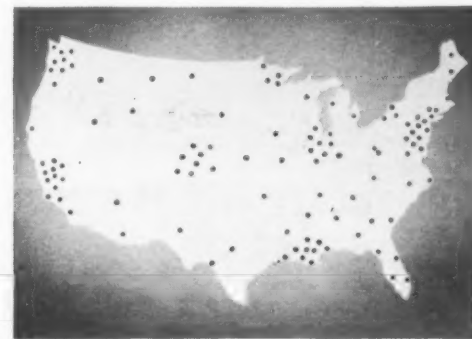
It's "happy days" for everybody—patrons, proprietor and supplier—when the air conditioning job is entrusted to a Brunner unit. That's because Brunner is so dependable. It eliminates all worries of breakdowns... keeps the cash register tingling and the proprietor smiling... builds good will all around!

In addition, there's Brunner's money-saving operation, enabling the refrigeration unit to pay for itself in shorter time. Secret behind this is in construction—in the lessons learned from years of research and practical experience. And Brunner units are built to give this economical, trouble-free kind of service for years on end.

There's a Brunner unit especially suited for every kind of air conditioning or refrigeration job. Available in a wide range of capacities from ¼ to 25 tons. Write for catalog. Brunner Manufacturing Co., Utica, N. Y., U. S. A.



3 WITH EVERY Brunner goes the Underwriters' Laboratories approval and the U. L. Seal. Proof of Brunner reliability.



4 EXPERT FIELD engineers, stationed in all parts of the U. S., are available for consultation on any refrigeration problem. Their practical experience will prove invaluable.

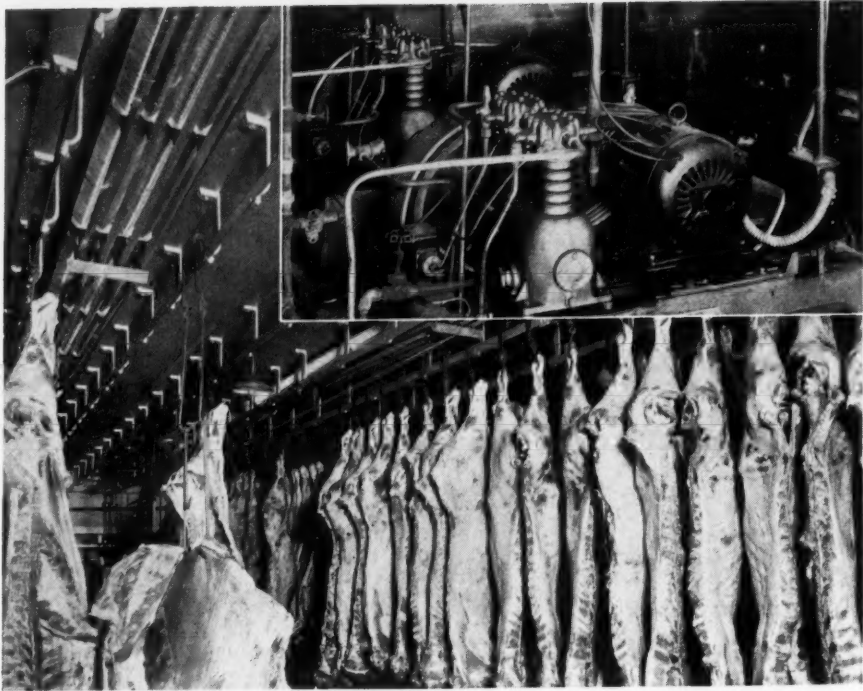
**BRUNNER**  
FOR YEARS THE  
SYMBOL OF QUALITY

GET THESE  
MONEY  
SAVING  
FACTS

SEND for the  
"inside story".  
Brunner superi-  
ority illustrated  
point by point.



## 40 Beeves Chilled Daily



The two 5-hp. Mills condensing units shown in the inset cool this Canton, Ohio beef storage room to 34-36° F.

### Stafford-Smith Named York Commercial Distributor

KALAMAZOO, Mich. — Stafford-Smith, Inc. has been appointed distributor for York commercial refrigeration and air conditioning products here. The company is operated by D. D. Stafford and R. E. Smith, who took over the business of North-Davis, Inc. when the organization was formed last year.

C. G. Wincup recently became associated with Stafford-Smith, Inc. in a sales capacity, and A. M. Stafford is office manager.

### Anaconda Copper Refrigeration Tubes

New cup seal keeps them clean and dry



THE AMERICAN BRASS CO.  
FRENCH SMALL TUBE BRANCH  
General Offices, Watertown, Conn.

### Canton Cooler's System Brought Up-To-Date

CANTON, Ohio—Two 5-hp. Mills methyl condensing units have been installed by Canton Refrigeration & Air Conditioning Co. here to supply refrigeration for a local beef cooler which previously was served by old ammonia machines.

Cooling surface in these rooms consists of "Recoy Down Draft" coils placed up near the ceiling between the meat rails. The installation was guaranteed to maintain temperatures of 34° to 36° F. and relative humidities of 85 to 90% when 40 beeves (about 20,000 pounds of meat) are placed in the room daily, according to C. J. Weaver of the refrigeration firm.

### Centrifugal Fan Lines Announced By Trane

LA CROSSE, Wis.—Two lines of centrifugal fans, one with forward curved and the other with backward curved blades, have been announced by the Trane Co. The former, developed to conserve space, lessen power requirements, and deliver full capacity at the slowest possible speed, is available in single and double widths in wheel diameters from 4½ to 60 inches.

The backward curved blade models are built with wheel diameters from 15 to 66 inches. Included in the line are direct connected fans.

## Refrigeration Plays Important Part In Canning of Pears

### Oregon Professor Cites Cooling Requirements

VANCOUVER, B. C.—Importance of refrigeration and close temperature control in the profitable handling of pears for canning was stressed by Prof. E. H. Wiegand of Oregon State College, Corvallis, Ore., in a talk before members of the Canned Foods Association of British Columbia at their sixth annual convention here.

Delay in transit of pears from orchard to cold storage is responsible for much of the loss in fruit storage, Prof. Wiegand declared, for temperature during harvest periods is fairly high. One day's delay at this stage, he said, often causes deterioration equal to that which may occur during 10 days' storage at 30° to 31° F.

#### 30-31° TEMPERATURE

Optimum storage temperature for pears is 30 to 31° F., asserted Prof. Wiegand. Pears freeze at 28° F., and therefore temperature for holding this fruit must be far enough above the freezing point to prevent any changes after they are brought out of storage. Storage temperatures of 35° to 45° F. are fatal to certain varieties of pears, he pointed out.

"Canners often have trouble with Bartlett pears and some of them cannot be accounted for," he continued. "The storage rooms in canneries are not always carefully supervised. In consequence blocks of pears in certain parts of the room will spoil while those in other sections keep in perfect condition. Stacking to insure proper air circulation prevents stagnation or pocketing of gases which may harm the fruit."

"Bartlett pears are known to have a definite storage life. When held beyond this period the flesh becomes hard, the skin scalds or turns bronze, and the fruit fails to ripen properly when removed from storage. This may also be true with fruit which apparently retains its firmness and green color and has a normal appearance."

Texture and flavor of pears improved in cold storage, Prof. Wiegand said when asked if there was any noticeable difference between cold storage pears and those handled direct from the orchard. While most canneries start their run with "hot" pears, canners prefer those from cold storage, he asserted.

## 'Blitz Moths' Berated



Moth "generals" are given a dressing down by "Der Fuhrer" after their parachute troops have failed to capture the "impregnable fortress" which is the cold storage vault operated by Parmelee-Furs, Inc. Hand-painted background adds a touch of realism to the scene.

## Fur Firm's Window Display Dramatizes Moth-Proof Refrigerated Storage Vault

OMAHA, Neb. — "Der Fuhrer" moth takes a beating in the papier mache window display entitled "The Repulse of the 'Blitz-Moth,'" created by A. E. Parmelee to attract attention of passersby to the mechanically refrigerated fur storage vault operated by Parmelee-Furs, Inc. here.

Central figure in the display is "Der Fuhrer" moth, complete with close cropped moustache, military cap, and swastika. He is receiving reports from three moth "generals." At the right is an "impregnable fortress," made of papier mache, with a heavily bolted door and labeled "cold storage." Dangling from the battlements of the fortress are two wrecked parachutes, made of white silk, with the moth parachutists lying dead at the edge of the roof.

According to the placards, moth general No. 1 reports that "our parachute troops dropped right into the moth-proof bag fortifications with no resistance. It was a picnic!"

Moth general No. 2 reports, "Our fifth columnists captured Fort Cedar Chest. We secreted ourselves in the furs before they were placed in the chest, and the rest was easy. The chest only gave us more seclusion for our work."

### New G-E Thermostat Aims At Low Operating Costs

SCHENECTADY, N. Y.—Cooling thermostat for use in control of unit room coolers, central plant coolers, and individual zones in zone systems has been designed by the industrial control section of General Electric Co. to cut the cost of cooling equipment operation and yet maintain comfortable temperatures.

This thermostat obviates need for outdoor compensating elements which previously boosted installation costs and made compensated control for small systems too expensive.

A heater element within the instrument produces a difference in temperature between the thermostat and the room, which varies inversely with the per cent of running time of the cooling equipment. This permits an automatic and gradual increase in the instrument temperature setting from 72 to 80° F. as the outdoor temperature rises to a point where the cooling equipment would normally run full time.

In addition to cutting operating costs, this thermostat's reducing the differential between indoor and outdoor temperature lessens the possibility of temperature shock for persons going from one temperature to another.

The thermostat is rated at 2 amperes at 25 volts, and 2 amperes at 110 or 220 volts when used with adapter assembly. It weighs 5 ounces and is 4½ x 2½ x 1½ inches in size. It is finished in silver-bronze.

General No. 3 reports, "Our bombers surely made the fur fly in a group of fur coats which were left unprotected outside of the cold storage fortress."

But "Der Fuhrer" rages over these "puny successes," which he terms "disgusting, utterly disgusting. You boast of penetrating moth-proof bags and cedar chests. But you've not made a single dent in yonder cold storage fortress. Your bombs have rattled off the fortress armor like peas on a tin roof!"

#### RABBIT RATIIONS

Two other subordinate commanders also may be seen, talking it over a little to one side. "It looks as though we were squarely behind the eight-ball," says one.

The other replies, "This means half rations for the entire mechanized moth forces. No more delicious ermine, beaver, or mink. Just rabbit and mighty little of that."

An artistic hand-painted background with a score of parachutists descending amid bursting bombs, and tanks crashing through barriers makes an effective, realistic battle scene.

Mr. Parmelee now operates a 16 x 60-foot vault refrigerated by a 2½-ton Baker unit. It was necessary to double the size of the vault two years ago, and now the vault has a capacity of 2,500 coats. Cooled air is discharged at the top of the vault through a blower and circulates throughout the vault.

### Fluorescent Lighting Stimulates Sales

DALLAS, Tex. — Every piece of used equipment on hand was sold by Air-Rite Corp. here in a test to determine the display potential of the store's recent remodeling, which included installation of fluorescent lighting.

Lacking 1941 models, George W. Knight, Jr. and L. E. Adler, operators of the firm, placed the used equipment on display and kept the fluorescent ceiling lights burning 12 hours daily, including evenings. The firm now plans to display new equipment in a similar manner, and will include a complete central conditioning and heating plant for demonstration purposes.

The remodeling provided parallel rooms on both sides of a central entrance passage which leads to executive offices. Each room is lighted with two 40-watt fluorescent lights.

### New Jobber In Gary

GARY, Ind.—Engineering Specialty Co., jobber of refrigeration and air conditioning supplies, has moved to larger quarters at 318 W. Ridge Rd., on U. S. highway No. 6.

## Make Wagner Motors Your SILENT Partner



### TWENTY FIVE BRANCH OFFICES AT YOUR SERVICE

Wagner maintains 25 sales and service branches conveniently located throughout the country. Trained sales-engineers are always ready to assist you in selecting the exact motor for your requirements. Each of the 25 Wagner branches carries a stock of motors ready for immediate shipment.

### Their quiet operation and dependable performance on Stokers, Refrigerators and Air-Conditioning Equipment builds Customer Satisfaction...

The quiet, dependable, trouble-free performance of Wagner motors builds customer satisfaction and good will. Service calls not only annoy the customer but sometimes seriously reduce your profit on the installation. Take a tip from the many manufacturers of refrigeration and air-conditioning equipment who are now using Wagner motors. They have found from actual experience that Wagner motors give dependable service under all types of operating conditions.

You can select a Wagner motor that exactly fits the job because Wagner motors are built in a wide range of types and sizes with electrical and mechanical characteristics to fit the varying requirements of all types of air-conditioning equipment.

It will pay you to acquaint yourself with the complete line of Wagner motors.

### MAIL COUPON TODAY

WAGNER ELECTRIC CORPORATION  
6400 Plymouth Avenue  
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Gentlemen:  
Please send me FREE bulletins MU177 and MU182 on Wagner single phase and polyphase motors.

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6400 Plymouth Avenue, Saint Louis, Mo., U.S.A.

MOTORS • TRANSFORMERS • FANS • BRAKES

SIX FINGER TIGHT CONNECTIONS AND NOT A SINGLE LEAK

### Superior Quick-Couplers

—are exactly what the name implies—handy little swivel couplers for "quick-coupling" charging lines, gauge lines, etc. to flare fittings—without the use of wrenches.

A soft composition gasket in the swivel connection does the trick. Run 'em up "finger-tight," and they're "gas-tight." Gasket easily and inexpensively replaced.

Ask your Jobber—or write for Catalog

**SUPERIOR VALVE & FITTINGS COMPANY**  
1509 WEST LIBERTY AVENUE • PITTSBURGH, PENNA.  
EXPORT: 100 VARICK STREET • NEW YORK, N. Y.



## Super-Market Is Air Conditioned as Part of 'Model' Refrigeration Job



Ceiling ductwork shown at left is used to distribute conditioned air in the super-market.

ST. LOUIS—What has been characterized as a "model installation" of commercial refrigeration and air conditioning for a super-market food retailing building was recently installed here by Sears & Piou, refrigerating engineers, in the Fred Rapp Super-market, located in Pine Lawn, Mo., a suburb of St. Louis.

Becoming one of the largest users of all types of commercial refrigeration, the super-market form of food distribution has loomed importantly during the past two years in St. Louis, with more than twenty California-type markets completed in 24 months.

### THE COMPANY INSISTS . . .

First, because of the multiple forms of refrigeration used, usually in various parts of the basement, the Rapp Market management insisted that all this equipment be located in one spot, away from the danger of damage through inept hands, and from heavy merchandise shifted from point to point. All refrigerating equipment is located in a 30 x 40-foot "room" in the center of the basement, separated from the merchandise storeroom by a heavy wire partition, and reached only by unlocking a heavy door at the front.

### 4 SODA FOUNTAIN UNITS

Located in the room are four small Nelson compressors for operating the soda fountain and an ice cream freezing room in the basement, a bank of four refrigerating compressors connected with an individual evaporative condenser for the meat market and other refrigerated cases, an oil-burning furnace, and a 30-ton Carrier air conditioning plant including two 15-ton reciprocating compressors and an evaporative condenser.

### USE EVAPORATIVE CONDENSER

Inasmuch as water expense in this "county" district of St. Louis was prohibitive, the evaporative condenser was the most economical means of condensing the refrigerant. Delivering 6,800 c.f.m. of cooled air through two ducts over the ceiling of the market, the conditioning system can use optionally 1,000 or 2,000 c.f.m. of fresh outside air, and is controlled by a thermostat set in the return duct. This provides a simple means of "sampling" the market air, which should be at 80° F. when the outside temperature is 95° F. (with 50% humidity).

During "in-between" weather seasons, the blower circulates entirely fresh air. In the summer, a bypass duct circulates air around the furnace, saving operating expense. In winter, it is heated by the oil-burning furnace, passing directly through the furnace from the blower, and into the market floor.

Enough pressure is maintained that two large doors may be open without outside air entering. Water sprays on vegetable displays provide enough humidity the year around.

### OTHER EQUIPMENT

Ten feet away from the air conditioning system are four Hussmann-Ligonier compressors of 3-ton size, for showcases, dairy case, freezer rooms, and frozen-food cases. Mounted in tandem these are connected with a small Peerless evaporative condenser between each two units, which condenses refrigerant with a forced stream of outside air. The condenser is connected by a short duct with an outside intake, and uses a 4,000 c.f.m. fan to circulate air through the coils.

To advertise this \$18,000 installation, customers of the market on the formal opening day were taken through the refrigerating room, and the purpose of all equipment explained at length.

## Steam Spray Can Prevent Grease Fire, Chief Says

BIRMINGHAM, Ala.—Protection against grease fires which sometimes occur in kitchen ventilating ducts in hotels and institutions can be provided by steam sprays and dampers, reports Fire Inspection Chief W. C. Bondurant following a \$1,500 blaze in the Tutwiler hotel here.

The fire, which produced much smoke and consequently attracted hundreds of spectators, was confined to the ventilator, blistering the pipe and surrounding walls. It was the third grease fire in this duct since 1925. Firemen chopped holes in the wall covering the pipe on the second, third, and fourth floors to spray the duct and poured water down from the top.

## Pittsburgh Men Form Conditioning Firm

PITTSBURGH — Sprague & Sprague, Inc., 6338 Penn Ave. here, has been formed to sell air conditioning and refrigeration equipment. The firm is capitalized at \$25,000. Principal incorporators include Frank A. Sprague of Mt. Lebanon, Norman S. Sprague, Jr. of Pittsburgh, and William A. Allen of Ben Avon.

## Package Units Solve Mortuary's Problem

DALLAS, Tex. — Package-type store-cooling units have solved the problem of providing adequate and economical air conditioning for the chapel and slumber room of the Ed. C. Smith & Bros. funeral home here.

Three Airtemp units were installed last year, installation having been made by Air-Right Corp. of Dallas. Two 5-hp. units were used in the chapel and a 3-hp. unit serves the slumber rooms.

According to Mr. Smith, the packaged equipment was installed at a much lower cost than that of a central system for the entire building, and at the same time results were satisfactory. While the units are not entirely quiet in operation, the noise factor has not been found serious.

As the chapel is seldom used for more than an hour at any one time, operation of the cooling units has been quite economical, Mr. Smith reports.

## Fedders Declares Another Dividend

BUFFALO—Fedders Mfg. Co. has declared a dividend of 20 cents a share on common stock, payable April 1 to stock of record March 20. The dividend compares with 35 cents paid in December and 15 cents which was declared in the first quarter of 1940.

## 25-Ton Conditioning System Installed In Newest Dallas Restaurant

DALLAS, Tex.—Twenty-five tons of air conditioning equipment, consisting of a 10-ton and a 15-ton York unit, have been installed in Sammy's cafe, one of the city's newest and swankiest eating places, by Dallas Air Conditioning Co.

Considerable commercial refrigeration equipment also has been installed to handle the normal kitchen operations. This equipment includes three ½-hp. compressors and one 2-hp. unit, and a York "Flak-Ice" machine.

### TWO INDEPENDENT UNITS

The conditioning system is split into two independent units, one of 15-ton and the other of 10-ton capacity. Two cooling towers of the induced current type have been erected on the roof of the building. Each of the two conditioning units has been made to include a York direct-fired furnace for heating.

The 15-ton system provides conditioning for a rectangular dining room and the lobby, and for approximately one-half of the main dining room, which is an aisle-like room extending across the arc of the building's curved front. The 10-hp. system handles the other half of the main dining room and also a smaller, supplementary dining room.

Air ducts are furred into the walls immediately below ceiling level, and serve a dual purpose. They not only provide for the transmission of the conditioned air, but they also are

used to conceal the fluorescent light tubes which provide the establishment with indirect illumination and the loudspeakers for the electric phonograph system.

Two exhaust fans of 4,000 c.f.m. capacity are included in the conditioning system, one of them handling air from the dining rooms and lobby, and the other taking care of air from the kitchen as well as the rest rooms.

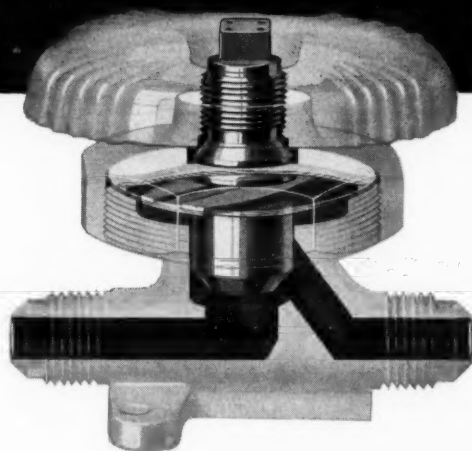
The Flak-Ice machine is used largely as an economy measure. To make it unnecessary to carry the maximum refrigeration load at all times, regardless of customer volume, ice bunkers for the cooling of drinking water have been installed in small niches in each of the dining rooms. Ice from the York machine is used in these bunkers.

Refrigeration equipment in the kitchen of the cafe includes a walk-in cooler, a step-in box, and pantry and beer cooler, the latter with a capacity of 400 bottles.

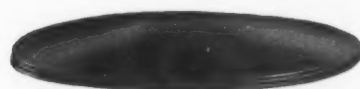
## Baltimore Distributor Leases Warehouse

BALTIMORE—H. E. Crook Co., Inc., 28 Light St., Airtemp air conditioning distributor, has leased the two-story brick warehouse at 8 S. Frederick St. to provide expansion for increased business. The concern is also a heating contractor.

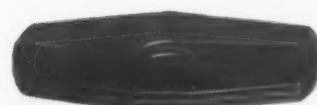
# WEATHERHEAD PACKLESS VALVES



1 HANDLE



2 DIAPHRAGM



3 DUPLEX FLAT SPRING



4 VALVE STEM

Only 4  
working  
parts...

-  **Simplicity**  
—a valve must open or close a line with minimum of effort and time.
-  **Simplicity**  
—a valve must contain the fewest possible working parts with nothing to get out of order.
-  **Simplicity**  
—valve must be compact and trim in appearance.
-  **Simplicity**  
—a valve must be easy to install.
-  **Simplicity**  
—a valve must be built of modern metals and designed from advanced engineering knowledge.

**WEATHERHEAD**  
*Simplicity*

valves are just what the  
name implies

*Simplicity*

THE WEATHERHEAD COMPANY, CLEVELAND, OHIO  
*Refrigeration Valves, Fittings and Accessories*



Sporlan Tells How . . .

## Pilot Controls Can Improve Coil Capacity In Air Conditioning

By Wm. F. Wischmeyer, Spoehrer-Lange Co.

Sporlan pilot controls are accessories to supplement the action of a thermostatic expansion valve. At the present time two types of pilot control systems are available; one, the magnetic shut-off, and the other, a modulating type which operates as a direct acting temperature control.

The operation of these pilot controls depends upon the variation of the pressure in the external equalizer connection of a thermostatic expansion valve. In every thermostatic expansion valve, whether the bellows type or diaphragm type, the amount of valve opening is determined by three basic pressures. These are the evaporator and spring pressures which tend to close the valve and the bulb pressure or power element

pressure which tends to open the valve. These pressures are diagrammatically shown in Fig. 1.

By increasing the evaporator outlet pressure through a device in the external equalizer connection the thermostatic expansion valve can be caused to throttle or shut off completely. This variation in pressure is accomplished by bleeding a small amount of refrigerant into the external equalizer connection of the thermostatic expansion valve ahead of the pilot control through a leak port or bleeder valve. The amount of leak is negligible.

The Sporlan magnetic shut-off pilot control is designed to replace the large liquid stop valve which has been a necessity on many air conditioning installations to obtain electrically operated shut off of the liquid line. This pilot control system consists of a small orifice solenoid valve and leak port. It is installed in the external equalizer connection as shown in Fig. 2. Only connection

pressure many times greater than any solenoid now available.

During the off cycle when the pressures have equalized on a system in which a large liquid solenoid valve is used the only thing tending to keep the valve closed is the weight of the plunger in the valve.

One pilot control will shut off any number of thermostatic expansion valves simultaneously by merely manifolding their external equalizer connections.

The modulating pilot control is a direct acting temperature control. Its application is for those installations which fail to give satisfactory operation when operating at reduced capacity, usually one-half load or less. This is normally the case during mild weather conditions when the sensible load is light and the latent load heavy. The compressor does not run long enough to reduce the relative humidity.

How the modulating control remedies this situation is best explained by describing its operation. Its installation is similar to that of the magnetic shut-off control and is shown in Fig. 3. In place of the small solenoid a regulating valve is used, this valve is controlled by its bulb which is suspended in the return air stream.

A simple calibrated adjustment is provided for raising or lowering the control point by a manual adjustment which is connected to the hydraulic capillary system of the regulating valve. When the air temperature is higher than the desired control point the regulating valve is wide open and the thermostatic expansion valve operates in its normal manner.

As the air temperature approaches the desired point the regulating valve throttles, causing the expansion valve to throttle, thereby reducing the effective area of the evaporator. As the expansion valve throttles the suction pressure decreases because a smaller amount of refrigerant is fed to the evaporator.

Air which passes over the effective coil area is dehumidified by a greater amount because of the lower coil temperature; that portion of air which passes over the remainder of the coil is not appreciably cooled because it is only coming into contact with that section of the coil through which superheated vapor is passing.

Although the expansion valve is caused to throttle by the modulating control the feeler bulb still controls the superheat of the refrigerant vapor and prevents any frost back or flooding through to the compressor.

Under extreme conditions the coils can ice up; however, this can be eliminated in one of two ways. One method is to set the low pressure cut out at a point where it will stop the compressor before the coils ice up. The second is the reduction of high side capacity such as cutting out one or more compressors, reducing the speed of the compressor motor, or blocking out cylinders in the compressor.

Obviously, this control will cause the compressor to run longer but additional comfort given by this modulating control will more than offset this small increase in operation cost. This system is more economical to install and operate than a reheat system which has the disadvantage of high first cost and increased operating expense. Installation of the modulating control is simple and inexpensive and it too can be used to modulate any number of thermo-

Fig. 1—Pressures Determining Valve Opening

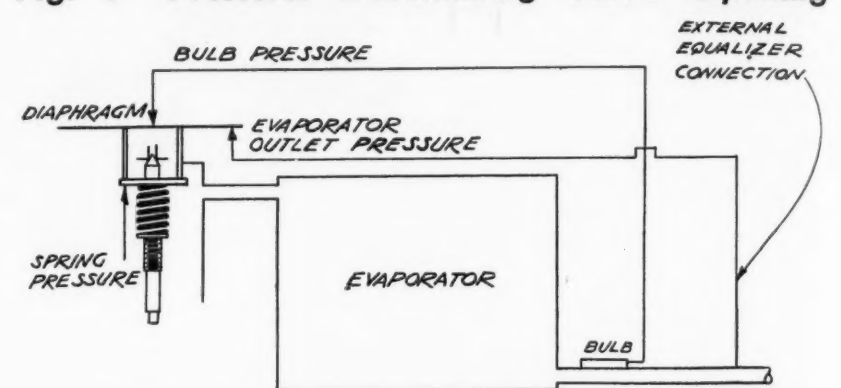
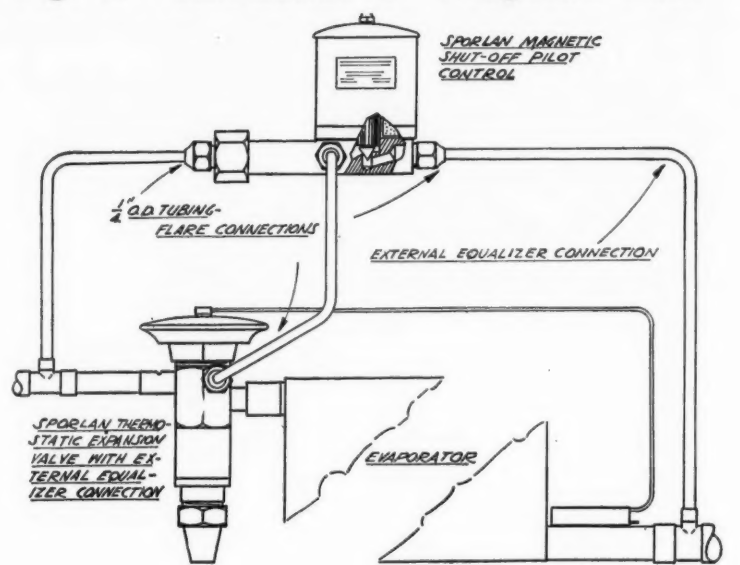


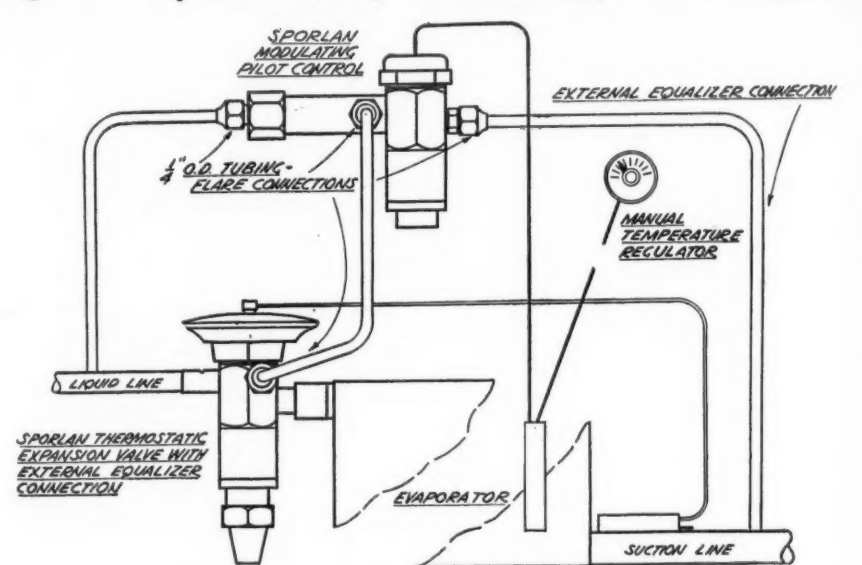
Diagram shows three pressures affecting valve opening.

Fig. 2—Installation of Magnetic Pilot



How the magnetic pilot control is installed.

Fig. 3—System Using Modulating Pilot Control



Connections for using modulating pilot control.

**Masterpiece for Economy**

**MASTERCRAFT ADJUSTABLE PAD AND CARRYING HARNESS**

Efficient, sturdy and economical. Provides safer handling and thorough protection of refrigerators. Pad and harness are separate units and both adjustable to practically all styles and sizes of cabinets.

Adjustable Pad \$10.00 each  
Adjustable Harness \$6.50 each f.o.b. Chicago. Lettering on pad at only \$1.00 per order extra.

Write for latest folder and prices on pads for refrigerators, washers, ironers, ranges, radios, etc.

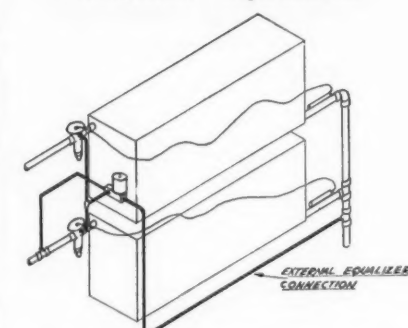
**BEARSE MANUFACTURING COMPANY**  
INCORPORATED 1921  
3815-3825 Cortland Street, Chicago, Illinois

**REFRIGERATION COPPER TUBING**

- 1 BRIGHT AS GOLD SMOOTH AS GLASS INSIDE AND OUTSIDE**
- 2 JUST RIGHT FOR EASY BENDING AND FLARING**
- 3 ENDS SEALED COILS WRAPPED**
- 4 ALL SIZES FROM 1/8" TO 3/4"**
- 5 IN EXACT 25, 50 OR 100 FT. COILS PLAIN OR ELECTRO TINNED**

**PENN BRASS & COPPER COMPANY, INC.**  
POWELL AVE., ERIE, PENNA.

### External Equalizer



This diagram shows how the external equalizer is used.

needed in addition to the external equalizer connection is the 1/4-inch tubing from the liquid line to the leak port.

The solenoid valve can be operated by any conventional means of control such as a thermostat or humidistat depending on the type of control desired. When the solenoid valve coil is energized the leak is vented to the low side so completely that true suction pressure exists under the valve diaphragm and the operation of the thermostatic expansion valve is normal.

However, when the coil circuit is opened and the solenoid valve closes the passage in the external equalizer connection the leak quickly builds up a pressure under the valve diaphragm—equal to condenser pressure—causing the expansion valve to close quickly and tightly. A tighter closing is had because a smaller orifice, that of the expansion valve, is closed and spring pressure supplements the action which gives a higher seating

★ Refrigerated

**FLEX-LINE**

BEER LINE ASSEMBLY

**A New Necessity for Remote Beer Storage**

Every tavern or club drawing beer direct from remote storage is a ready prospect for exclusive CHIL-KWIK "Flex-Line" (\*patents pending)—the refrigerated, insulated, flexible beer line assembly. "Flex-Line" positively maintains any desired beer temperature, regardless of length or surrounding conditions.

Comes in convenient stock sizes, or can be "tailor-made" to fit without cutting or adjusting. Here is a great opportunity for you to develop extra business that shows a real profit. Additional dealers and distributors are being appointed daily.

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expansion valve diaphragm by a device in the external equalizer connection such as a stop valve or regulating valve offers many possibilities to meet any desired control requirements.

### Swift Installs Unit Coolers In Offices

CHICAGO—Swift & Co. have purchased a number of 3 and 5-ton Fairbanks-Morse store cooling units for use in the company's offices throughout the south and southeast. Under the program Swift branches at New Orleans, Atlanta, Baton Rouge, La., and Mobile, Ala. have already been equipped with air conditioning and other cities are to follow.

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**Lipman**

GENERAL REFRIGERATION DIVISION  
Yates-American Machine Co.  
Dept. AC-1, Beloit, Wisconsin



## Radiant Heating

# Electricity, Reversed Cycle Refrigeration And Warm Air All Used As Heat Source

By Henry Knowlton

Electricity may be used as a source of energy for radiant heating systems, but in most instances it has been found to be too expensive for anything but "spot" heating.

Panels of asbestos cement board, first made commercially available in Holland, contained a reinforcing element designed to operate as an electrical resistance grid. Used to supplement existing heating systems, these panels may be curved to form the end of a decorative cabinet or shelving, or may be made into portable folding screens.

**Editor's Note:** This is the fifth in a series of articles on radiant heating. Previous articles were published in the issues of Dec. 18, 1940; Jan. 1; Jan. 8; and Feb. 5.

For a number of years infra-red "radiant" lamps have been used to dry automobile finishes with a speed unknown before their adoption. To test the effect of these heaters in an exposed space, Detroit Edison Co. installed a battery of infra-red lamps on the underside of a projecting roof extending over an exposed loading platform.

### UTILITY EXPERIMENTS

The "heat" was very apparent to men working on the platform when there was no wind, but the lamps were found to be virtually worthless on cold, windy days. The amount of heat radiated to the workmen was not great enough to off-set the heat carried away by the cold wind.

Another experiment has been conducted by the Detroit Edison Co. at the company's Delray plant. Here "plate" heaters, built in England, were suspended about 9 feet from the floor, directly over workmen. Containing resistance elements, the plate heaters had heavily insulated backs, to prevent heat from being radiated upwards. Thus the air space above the heaters, which extended perhaps 45 feet to the building roof, was not heated by the radiant units.

The results of this system have been entirely satisfactory from the standpoint of workmen in the shop, but no cost figures have been released up to the present time. Comparative figures might prove interesting, as the adjacent steam heated shop is of almost exactly the same dimensions as the experimental room.

### ELECTRIC 'SPOT' HEATING

In general, electricity is too expensive a source of energy to be used in radiant heating systems for buildings. Its comparative cost with other fuels is unfavorable, but it has many applications in the "spot" heating field.

It is possible to produce a practical radiant heating system where electricity is used to transfer heat from air or water to the heating medium. This is accomplished by

the use of a reversed cycle refrigerating machine. The comparatively expensive electricity operates the machine, which, in reverse, gives up heat from its condensing coil to the heating medium. Such a system has been installed in the residence of C. E. Boggs at Boise, Idaho.

The refrigerating machine in the Boggs residence is used to extract heat from 60° F. well water. The heat generated is conducted through a network of small copper tubes embedded in the plaster walls of the house. The warm wall surfaces create a new feeling of comfort and keep the rooms at a constant temperature, even during periods when the refrigerating machine is cycling.

### YEAR-AROUND SYSTEM

Another coil, located in the air duct, supplies warm air in winter and becomes the cooling coil in summer when the system is reversed. Thus the single system is used for radiant heating, direct heating, and for summer air conditioning. It was designed by Mr. Boggs and Westinghouse engineers.

One of the simplest methods yet devised for radiant heating in a residence employs small radiators located in the stud spaces on both the inside and outside walls. Such a system has been tested by E. J. Rodee of the John B. Pierce Laboratory of Hygiene at New Haven, Conn.

In this system the stud spaces were insulated with three layers of asbestos paper lined with aluminum foil. A baffle, made of stiff paper, extends upwards from the small radiator to a point near the top of the stud space.

### BAFFLE ESSENTIAL

This baffle carries warm air from the radiator up the stud space, close to the plaster, thus warming the plaster surface. The air returns on the outside of this baffle—dropping back to the radiator, where it is reheated. Experience has shown that the baffle is essential to the satisfactory operation of a system of this type. Without it, air in the stud space reaches an equilibrium in temperature and will not circulate over the radiator.

While the system was tested in only part of the New Haven residence, and has not been used to heat an entire house, results point to the fact that heating the air in stud spaces may prove to be an entirely feasible method for the installation of a radiant heating system. No fuel savings were shown on the basis of heating only part of the building.

It was found, however, that unless the outside walls were heated, as well as some of the inside walls, body heat losses from occupants of the rooms were increased. With the system in operation, however, both floor and ceiling temperatures were found to be stable. No cost figures on the installation were made available.

## Free Trial—Quick Delivery Speed Conditioner Sales

JENNINGS, Mo.—Speed in delivery, which means installing a package air conditioner the same day the prospect is contacted, has made many "quick sales" in the residential field for Florissant Furniture Co.

A light trailer of the type designed for hunting equipment is always kept loaded with a ½ or ¾-ton conditioner. The unit is set on a piano carrier with rubber tire wheels.

Unlike many conditioner dealers, the Florissant company hasn't stepped into the business or professional men's field. The household market, explains R. M. Latimer, manager, has consistently soaked up so much of its stock that it hasn't been necessary to look elsewhere for prospects.

In prospecting for sales, the salesmen always look for the man who has a study or office in his own home.

Conditioners are installed on the basis of a four-day free trial. Should the prospect wish to hold the unit for a few more days, he is charged rental of \$1 a day.

## Groceries Good Market For Packaged Units

CHICAGO—Grocery stores provide a market for packaged air conditioning equipment which is of increasing importance, in the opinion of Hal Wheeler, of Air Comfort Corp. here. During the past year Air Comfort has installed a 4-ton store cooling unit in the J. Leonardi store in Oak Park, Ill.; two 5-ton units in an A & P market on the north side, and have installed single 5-ton units in three Morgan stores.

### Multiple Units Cool Factory

GADSDEN, Ala.—Several independent Westinghouse air conditioning systems totaling 1,200 tons are said to be included in the new \$15,000,000 windowless shell forging plant being erected here for the federal government by Rust Engineering Co. of Pittsburgh.

Plans call for some dozen suspended overhead units, independent of each other so that if one is put out of commission by bombing, the others will not be affected.

## Service Slants on Room Coolers

### Customers Must Be Taught To Operate Unit Conditioners

CHICAGO—"Room cooler salesmen should teach their customers how to use the equipment, to avoid unnecessary service problems," says Harvey O. Miller, of Murphy & Miller, Inc., refrigeration and air conditioning service firm here. By installing the majority of room coolers sold in Chicago last year, the firm gained broad experience covering the public's reaction to room conditioners.

Many room cooler service calls could be avoided, if the customer had been properly instructed in the operation of the unit, Mr. Miller believes. Often service men answering a call found that the unit was not plugged in, the window was closed, or that the conditioner was exhausting air when the customer wanted cooling.

### TEACH THE CUSTOMER

"Operation of a room cooler is relatively simple," Mr. Miller said, "but the salesman must understand that his customer does not know the first thing about it. The customer must be instructed in the few simple things necessary to make the unit operate properly, and make the installation a success."

Contrary to general belief in the trade, Mr. Miller found very few room coolers causing trouble because they were too small. Such cases were in the minority, because room coolers are not being "oversold" as in former years.

"All the customer expects is comfort—" Mr. Miller said, "and in the great majority of cases he gets comfort from the unit. Owners do not worry about temperature drop, or humidity reduction—all they expect is to be comfortable, and this speaks well for the methods now used to sell room coolers."

One of the most difficult problems encountered in the servicing of room coolers is noise—and not the noise created inside the room where the conditioner is used—but outside. Conditioners installed in apartment house windows, for example, would bother the people across the court, and those persons living above and below.

### AIR NOISE

Mr. Miller found that this situation was created by air noise from the room cooling units. If the conditioners were equipped with centrifugal fans, it was possible to equip them with a protecting hood, and thus cut down the noise. But in cases where the units had blade fans, installing the sheet metal hood would cut down the air handling efficiency of the unit to the vanishing point.

Another problem encountered by Murphy & Miller in servicing room coolers was the special motors used in many units. When one of these special motors burned out the customer was loath to pay the relatively high cost for replacement. Mr.

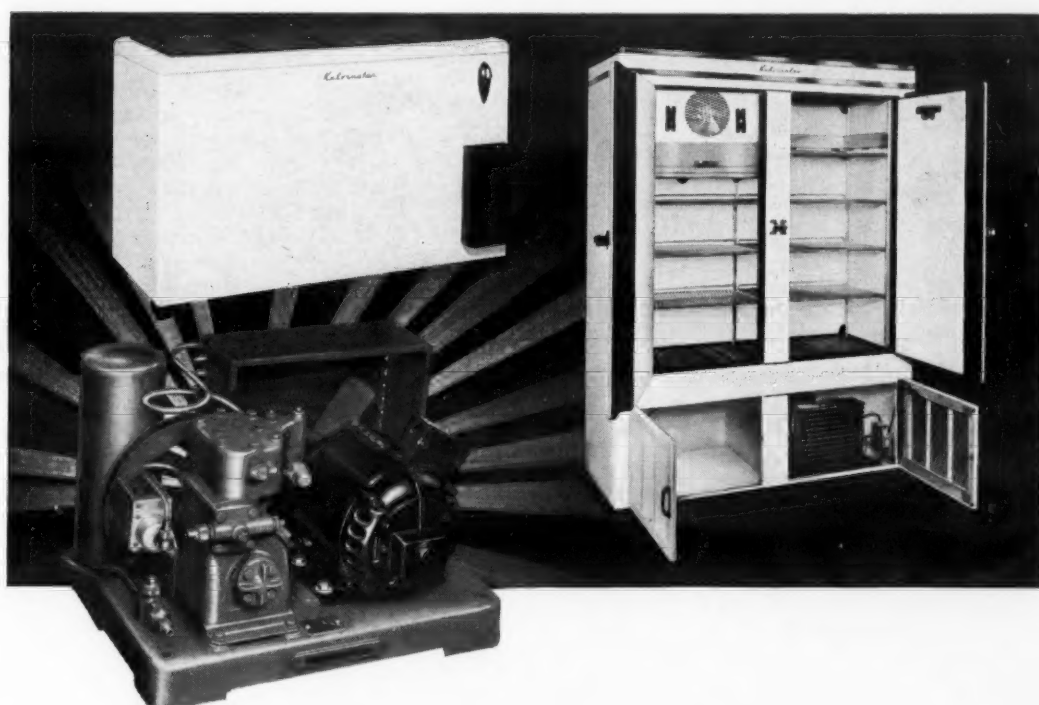
Miller hopes that standard refrigeration motors will eventually be incorporated into room cooler design and the special motors, some of which have double end shafts, be eliminated.

Perhaps the most vexing service problem, which has been entirely eliminated in 1941 room cooler models, was that caused by air blowing through the units when they were not in use. Many room coolers were installed in high buildings, in locations where the outside air pressure was great, and during period when the conditioners were not running they permitted air to sweep into the offices, blow papers off the desks, and create unpleasant drafts.

Weatherstripping and better construction has eliminated this problem in the 1941 room cooler models, Mr. Miller said.

### PROBLEMS NOT SERIOUS

By and large, room coolers do not present any serious service problems, Mr. Miller has found. If the unit is properly installed, and the customer is taught how to operate it—the only service is changing filters and making slight adjustments. Mr. Miller is enthusiastic about the possibilities inherent in the room cooler business, and is directing his organization toward creating satisfied customers in all cases where his firm handles both the installation and service.



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## Air Conditioned Bomb Shelter Considered By Hospital Heads

BUFFALO—An air conditioned, bomb-proof shelter may be constructed in the basement of Meyer Memorial Hospital here, which has already directed architects to prepare preliminary sketches.

"This is merely an attempt to plan for the future," the hospital board explained. "No change in the hospital's physical structure will be made at this time. These precautionary measures are being taken against the possibility of bombing raids."

Without any alteration in the contour of the buildings, the basement could be bomb-proofed, air conditioned, and set up as a self-contained hospital unit for a comparatively small sum, believes Dr. Walter C. Goodale, hospital superintendent, who also pointed out that hospitals throughout the country are giving greater thought to special protective measures for patients in event of a national emergency.

## Cooled Laboratory To Test Metabolism Of Cats, Monkeys

LEXINGTON, Ky.—The first scientific tests to discover the effect of changing temperature and humidity on the water metabolism of cats, dogs, and monkeys are being conducted at the University of Kentucky with the aid of a "constant temperature and humidity laboratory," it was revealed by Dr. R. S. Allen, head of the department of anatomy and physiology.

Temperatures ranging from 10° to 100° F. and humidities ranging from 20% to saturation (100%) are being employed in the tests, Dr. Allen said. The test laboratory in which the experiments are being conducted is the first of its kind ever set up, he said, and was designed by air conditioning engineers of the Carrier Corp.

"The water metabolism—or water involvement in the bodily chemical reactions—is one of the most delicately regulated processes of the body," Dr. Allen explained, in outlining the tests.

"In making these water balance studies, we were confronted with many difficult problems. This is the first time quantitative studies of this kind have been attempted. They can be carried out only under absolutely rigid and simultaneous control of the temperature and humidity of air."

"What we are attempting to determine is 'to what extent do external temperature and humidity changes interfere with or disturb the vital processes of the human body?'"

Dr. Allen pointed out that results of the tests should provide important data to the medical world and the air conditioning and ventilation engineer, particularly.

"We already know that increases in room temperature bring about an increase in water loss from the body, chiefly through evaporation and if replacement is interfered with, certain vital bodily processes are disturbed," Dr. Allen said.

"In the reversed situation (decreased room temperature), you would find exactly the opposite to occur."

"Now, in the case of humidity, it could be readily seen that if the humidity should be increased and the temperature constant, the animal's water loss and ingestion would necessarily have to be altered to take care of the normal function."

"Many varied combinations of these two very vital factors and their function effects on the body are just a few of the things that are to be studied in this constant temperature-humidity laboratory."

"The laboratory room was set up with the aid of a Carrier refrigeration unit, cold diffuser, and a condensing unit, with special heater and refrigeration controls and a motor-operated damper to control the percentage of recirculated air."

## 1940 Conditioning Installations

*Editor's Note:* Following tabulations give the essential market data on air conditioning systems installed in a number of cities during 1940. Information given includes, where possible, the name and address of the establishment in which the installation was made, make of equipment and dealer-contractor that installed it, and tonnage and total connected horsepower in the system. This information, extremely helpful in air conditioning marketing forecasts, is collected by progressive power companies.

### Toledo, Ohio

(Data compiled by Toledo Edison Co., Power Div.)

Name and Address	Make of Equipment and Installer	Hp.
Frank Welzbacker, 4800 Detroit.....	York (York Toledo)	8.50
Dixie Inn Club, 4800 Detroit.....	York (York Toledo)	51.00
E. H. Kern, 1828 Parkside.....	York (York Toledo)	5.75
William Weaver, 2284 Unity Walk.....	York (York Toledo)	9.75
Paul W. Kerchner, 309 Richardson Bldg.....	York (York Toledo)	9.75
Dr. A. Klein, Medical Bldg.....	York (York Toledo)	0.50
Ed. Tasker, 3109 Richmond Rd.....	York (York Toledo)	0.75
Interstate Coffee Co., 923 Summit.....	Westinghouse (Hoffman Harpst)	5.75
Hub Cafe, 415 Madison.....	Westinghouse (Hoffman Harpst)	11.00
Webster's Inn, 4826 Detroit.....	Westinghouse (Hoffman Harpst)	23.00
Zimmerman's Restaurant, 436 Huron.....	Westinghouse (Hoffman Harpst)	8.50
Home Bank Bldg., 902 Broadway.....	Westinghouse (Hoffman Harpst)	5.75
Hillcrest Hotel, 241 16th.....	Westinghouse (Hoffman Harpst)	3.00
White Hut, 1490 Sylvania Ave.....	Carrier (H. C. Baker)	8.00
Esquire Theater, 209 Superior.....	Airtemp (N. S. Larsen)	57.50
Toledo Sport Center, 1516 Starr.....	Airtemp (N. S. Larsen)	31.00
Edgewater Cleaners, 5216 Summit St.....	McCray (McCray Ref.)	2.00
Lindow Association, 958 Phillips.....	Ilg (Affleck Htg. Ser.)	7.00
Spicer Mfg. Co., 4100 Bennett Rd.....	Frigidaire (Winter's Elec.)	30.00
Harry Heintz, 4401 Lagrange.....	Frigidaire (F. A. George)	0.75
Luef Hardware, 801 Galena.....	Frigidaire (F. A. George)	0.75
Smith & Bidler, 815 E. Broadway.....	Frigidaire (F. A. George)	0.75
Granada Gardens, 4579 Monroe St.....	Lipman (A. A. Bauer)	11.00
Millers Store, Inc., 350 W. Central.....	Trane (Patchen Elec.)	28.75
<b>Total</b>		<b>302.50</b>

### San Antonio, Texas

(Data compiled by San Antonio Public Service Co., San Antonio, Tex.)

Name and Address	Make of Equipment and Installer	Hp.
<b>COMMERCIAL AND INDUSTRIAL</b>		
National Bank of Commerce.....	Worthington (Straus-Frank Co.)	108.25
W. Commerce & Soledad.....	Carrier (Frank Springer)	7.50
Zimmerman's Shoe Store, 404 E. Houston.....	Carrier (Martin Wright)	5.25
United Cigar Store, Gunter Hotel Bldg.....	Carrier (Martin Wright)	
Carl's Ladies Ready-To-Wear.....	Carrier (Martin Wright)	15.00
221 E. Houston.....	Carrier (Martin Wright)	0.75
Glidden Paint Store, 134 W. Commerce.....	Frigidaire (Straus-Frank Co.)	30.00
Magnolia Petroleum Co., 227 Broadway.....	Governair	23.00
Harlandale Theater, 5625 S. Flores.....	Governair	23.00
Highland Theater, 1833 S. Hackberry.....	Carrier (Martin Wright)	8.50
Walgreen's Drug Store, 300 E. Houston.....	Carrier (Martin Wright)	17.50
Coca Cola Bottling Co., 123 LaFitte.....	Carrier (Martin Wright)	0.75
Laurel Hts. Recreation Center, 2610 Main.....	Carrier (Martin Wright)	8.25
Swift & Co., 1901 S. San Marcos.....	York (Ebert Air Cond. Co.)	50.50
Bern's Department Store.....	Frigidaire (Straus-Frank Co.)	10.00
W. Commerce & Soledad.....	Carrier (Martin Wright)	10.50
Medical & Surgical Hospital, 215 Camden.....	Carrier (Martin Wright)	5.50
Fenner Beane Co., 319 N. St. Mary's.....	Carrier (Martin Wright)	3.25
Bell Jewelry Co., 516 E. Houston.....	2 Room Coolers	1.00
W. E. Dean Finance Co., 522 Broadway.....	Curtis	6.50
Grande Courts Cafe, 758 E. Mulberry.....	Frigidaire (Straus-Frank Co.)	3.00
Alamo Pkbg. Supply Co., 611 Main Ave.....	Westinghouse (A. J. Monier Co.)	4.50
District Offices, Pontiac Co.....	Frigidaire (Straus-Frank Co.)	36.50
Smith Young Tower.....	Carrier (Martin Wright)	49.00
Hangar No. 6, Stinson Field.....	Philco-York (Taylor Dist. Co.)	4.50
Main Ave. Bowling Alley, Main & Locust.....	Copeland	270.00
S. H. Kress Co., W. Commerce & N. Flores.....	York (Wm. A. Ebert Co.)	10.00
Travelers Hotel, 218 Broadway.....		
New Moore Bldg., Broadway.....		
Richter's Bakery, Broadway.....		
<b>INDIVIDUAL OFFICES</b>		
Dr. Talbot Foster, Medical Arts Bldg.....	Carrier (Martin Wright)	0.75
Alamo National Bldg., 306 W. Commerce.....	Philco-York (Taylor Distributing)	22.50
City Hall, Military Plaza.....	Strang	2.00
<b>RESIDENTIAL</b>		
Royal Tourist Courts, 122 E. Grayson.....	Carrier (Martin Wright)	0.75
Henry Oppenheimer, 105 E. Elmira.....	Carrier (Martin Wright)	0.75
G. F. Fellay, 114 Brittany.....	Carrier (Martin Wright)	0.75
Ben Ruby, Magnolia Ave.....	Carrier (Martin Wright)	0.75
A. J. Carlisle, 1435 Fulton.....	Philco-York (E. G. Langhammer)	0.75
Dr. J. W. Nixon, 129 E. Gramercy.....	Carrier (Straus-Frank Co.)	5.25
A. J. McKenzie, 138 Oakmont.....	York (Wm. A. Ebert Co.)	8.00
George Parker, Paseo Encinal & Wildwood.....	York (Wm. A. Ebert Co.)	20.00
Mrs. A. L. Palmer, 211 Morningside.....	Westinghouse	0.50
Charles A. Lipp, 305 Genesee Rd.....	Air Cond. (Dixie Htg. & Vent.)	8.25
Capt. A. E. Brown, 8 Circle St.....	Philco-York	0.50

### Manchester, N. H., Territory

(Incomplete data compiled by Public Service Co. of New Hampshire, Manchester, N. H., from reports of some dealers.)

Name and Address	Make of Equipment and Installer	Hp.
<b>BANK</b>		
Amoskeag, Manchester.....	Carrier	18.00
<b>THEATERS</b>		
Strand, Manchester.....	Westinghouse	85.00
Rex, Manchester.....	Westinghouse	38.00
<b>RESTAURANTS</b>		
Hanover Inn, Hanover.....	General Electric	5.00
Sun Sun Inn, Dover.....	General Electric	6.00
Ellis Hotel, Keene.....	General Electric	7.00
<b>INDUSTRIAL</b>		
R. Theodore, Manchester.....	Carrier	27.50
<b>OFFICES</b>		
McLane & Davis, Manchester.....	Frigidaire	5.75
Hermendorf Fixture Co., Manchester.....	Kelvinator	1.25
Bullard & Shedd, Keene.....	General Electric	3.00
<b>RESIDENCES (WINTER ONLY)</b>		
18 Units.....	Nu Way	3.00
21 Units.....	Lenox	5.25
17 Units.....	General Electric	8.58

### Akron, Ohio, Area

(Data compiled by Ohio Edison Co., Akron Division)

Name and Address	Make of Equipment	Hp.
<b>STORES</b>		
Leroy Jewelry Co., 206 S. Main St.....		5.33
Scott-Burr Stores, 252 S. Main St.....	Westinghouse	74.75
<b>RESTAURANTS</b>		
Mary Lee Candies, 219 S. Main St.....		5.33
Mary Coyle, 828 W. Market St.....		2.66
W. J. Schaefer, 261 W. Main St., Ravenna.....	Frigidaire	5.33
C. Igert, 312 S. Main St.....		5.33
B & B Steak Station, 808 W. Market St.....		5.33
Berrodin's Cafe, 816 W. Market St.....		
<b>MISCELLANEOUS</b>		
City Hospital, Akron, Nursery.....		2.66
J. B. Hummel Funeral Parlor.....		
500 E. Exchange St.....	Carrier	5.33
Mayflower Hotel, Hawaiian Room.....		33.33
Eagles Home Co., 131 E. Market St.....	Westinghouse	62.75

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## How Cooling Systems Stack Up In Various U.S. Metropolitan Areas

	1939		1940		Total	
	No.	Hp.	No.	Hp.	No.	Hp.
Akron, Ohio, Div., Ohio Edison Co. ....	8	193.31	12	213.48	96	1,894.23
Augusta, Me., Cen. Maine Power Co. Terri.	18	88.75	1	10.00	29	152.25
Baltimore, Md., Consolidated Gas, Electric Light & Power Co. Territory	438	2,553.00	669	2,970.00	1,886	21,730.00
*Room coolers, 1½ hp. or less.....	322	251.00	555	426.00	1,160	981.00
*Store coolers, 2 hp. or more.....	51	220.50	58	258.00	149	635.00
Boston, Boston Edison Co. Territory....	460	2,241.00	541	1,851.00	1,895	18,842.25
*Room coolers, 1½ hp. or less.....	367	273.75	424	294.00	1,205	935.75
*Store coolers, 2 hp. or more.....	36	176.75	39	138.25	112	431.25
Chicago, proper, Com'wealth Edison Co....	334	4,945.00	389	8,609.00	2,407	87,940.00
Connecticut Light & Power Co. Territory, Greenwich, Meriden, Waterbury, Norwalk, etc. ....	23	92.92	32	145.23	141	1,506.83
Dallas, Tex., Dallas Power & Light Co. Territory .....	113	2,669.82	211	2,620.78	935	20,430.65
*Room coolers, 2 hp. or less.....	54	42.48	115	77.96	502	435.59
*Store coolers, above 2 hp.....	30	79.87	37	212.83	112	425.33
Dayton, Ohio, Dayton Power & Light Co. Territory .....	56	312.65	61	418.87	..	..
Detroit, Mich., Detroit Edison Co. Terri.	343	3,602.69	545	12,339.00	..	49,457.00
El Paso, Tex., El Paso Electric Co. Terri.	2	85.00	4	34.25	145	1,829.00
Hartford, Conn., Hartford Electric Light Co. Territory .....	..	354.25	..	187.75	..	2,326.00
Hagerstown, Md., Potomac Edison System Territory .....	46	106.40	50	551.30	222	1,174.30
Indianapolis, Ind., Indianapolis Power & Light Co. ....	79	485.99	122	2,835.00	535	10,342.00
Kansas City, Mo., Kansas City Power & Light Co. Territory .....	247	1,889.33	189	1,267.20	1,456	19,479.00
*Room coolers, 1½ hp. or less.....	176	115.42	128	86.50	788	576.92
*Store coolers, 2 hp. or more.....	27	102.25	41	163.75	121	484.16
Knoxville, Tenn., Knoxville Electric Power & Water Board Territory.....	..	97.50	..	238.00	..	2,189.25
Lawrence, Kan., Kansas Electric Power Co. Territory .....	19	102.50	26	109.75	125	952.50
*Self-contained units .....	1	1.00	15	14.75	41	50.25
Lincoln, Ill., Central Illinois Electric & Gas Co. Territory .....	4	24.00	2	6.75	13	86.25
Los Angeles, Calif., Southern California Edison Co., Ltd. Territory .....	1,489	2,228.00	2,602	1,975.00	..	..
Madison, Wis., Wisconsin Power & Light Co. Territory .....	146	69.20	74	71.00	..	..
Miami, Fla., Central and Southern Florida Territory of Florida Power & Light Co.	82	1,079.00	162	2,051.10	..	..
Minneapolis, Minn., Northern States Power Co. ....	98	631.00	78	535.00	538	4,078.00
Milwaukee, Wis., Metropolitan Area, Wisconsin Electric Power Co.....	101	753.01	122	673.84	504	8,643.07
*Room coolers, 1½ hp. or less.....	56	42.98	67	44.16	200	149.69
*Store coolers, 2 hp. or more.....	18	65.55	32	137.08	65	267.96
Public Service Bldg. (not included above)	..	14.50	..	227.75	..	488.25
Newark, N. J., All cities in Public Service Electric & Gas Co. Territory.....	..	..	216	2,727.50	1,009	16,475.00
New Hampshire (incomplete), Public Service Co. of New Hampshire, Manchester, N. H. ....	79	238.42	66	213.33	271	718.24
New York City, reported by Consolidated Edison Co. of New York, Inc. ....	71	786.74	59	1,525.45	..	..
Bronx .....	184	922.95	146	1,130.81	..	..
Brooklyn .....	1,141	14,956.18	958	13,742.58	..	..
Manhattan .....	173	2,511.41	104	1,525.66	..	..
Oklahoma City, Oklahoma Gas & Electric Co. Territory.....	160	860.12	134	980.25	960	10,106.20
*Room coolers, 1½ hp. or less.....	141	109.08	89	61.80	527	408.92
*Store coolers, 2 hp. or more.....	34	185.12	34	212.90	138	726.09
Pensacola, Fla., Gulf Power Co. Territory	6	87.75	17	185.41	48	914.06
Philadelphia Electric Co. Territory.....	314	6,281.13	1,137	7,318.24	2,586	56,389.07
*Room coolers, 1½ hp. or less.....	197	165.28	910	503.15	1,507	..
*Store coolers, 2 hp. or more.....	107	433.58	173	974.23	385	..
Phoenix, Ariz., Central Arizona Light & Power Co. Territory .....	..	..	34	851.75	304	7,655.83
Pittsburgh, West Penn Power Co. Terri.	24	159.74	45	299.62	131	1,685.72
Pittsburgh, Duquesne Light Co. Territory	183	997.75	183	2,172.75	1,100	16,802.00
Pittsfield, Mass., Pittsfield Electric Co. Territory (Commercial only).....	3	39.50	1	25.00	8	114.75
Portland, Ore., Northwestern Electric Co. Territory .....	..	..	5	28.50	..	..
Poughkeepsie, N. Y., Central Hudson Gas & Electric Co. Territory.....	19	1,034.31	9	105.25	49	1,376.81
*Room coolers, 1½ hp. or less.....	10	4.06	6	3.25	19	9.81
*Store coolers, 2 hp. or more.....	2	4.00	7	29.00	14	48.00
Providence, R. I., Narragansett Electric Co. Territory .....	40	442.12	33	251.08	153	2,404.66
Richmond, Va., Virginia Electric & Power Co. Territory.....	..	1,876.50	..	1,436.00	..	12,461.00
Rochester, N. Y., Rochester Gas & Electric Corp. ....	37	355.50	46	441.50	220	30,209.50
Shreveport, La., Southwestern Gas & Electric Co. Territory.....	..	..	89	1,049.56	299	4,698.39
Spokane, Wash., Washington Water Power Co. System.....	14	140.00	31	160.00	206	3,109.00
*Room coolers, 1½ hp. or less.....	4	4.00	8	7.00	35	33.00
*Store coolers, 2 hp. or more.....	5	23.00	15	36.00	26	79.00
Springfield, Mass., United Electric Light Co. Territory .....	145	1,605.20	28	139.00	173	1,744.00
St. Louis, Mo., Metropolitan Area, Union Electric Co. of Missouri.....	392	8,501.66	398	6,742.93	1,972	51,238.01
St. Paul, Minn., Northern States Power Co. ....	59	411.00	101	230.00	350	1,762.00
Toledo, Ohio, Toledo Edison Co. System	31	957.00	24	306.00	238	5,110.00
Virginia Public Service Co., Charlottesville, Va., Territory.....	23	297.80	33	569.20	171	1,872.20
Washington, D. C., Potomac Electric Power Co. Territory.....	316	5,239.75	509	15,681.25	..	..
*Room coolers, 1½ hp. or less.....	634	402.50	973	626.50	..	..
*Store coolers, 2 hp. or more.....	125	605.25	106	564.75	..	..

\*Self-contained unit totals included in company's total figures above.

## 1940 Air Conditioning Installations Reflect Faster Industrial Tempo

By George Munford

DETROIT—Air conditioning installations skyrocketed during 1940 in midwestern industrial cities and in the national capital area and nearly doubled in the winter vacation cities of Florida.

Comparative data on air conditioning installations during 1939 and 1940, furnished by public utility companies to AIR CONDITIONING & REFRIGERATION NEWS, show the following totals of horsepower of motor load:

	1939	1940
Chicago	4,945.00	8,609.00
Dayton	312.65	418.87
Detroit	3,602.69	12,339.00
Indianapolis	485.99	2,835.00
Knoxville	97.50	238.00
Pittsburgh	997.75	2,172.75

In the territory served by the Potomac Electric Power Co., Washington, D. C., air conditioning installations jumped from 5,239.75 hp. in 1939 to 15,681.25 hp. in 1940. These figures include governmental installations which increased from 1,026.75 hp. in 1935 to 12,295.50 hp. last year.

In the territory served by the Potomac Edison Co., Hagerstown, Md., installations were boosted from 106.4 hp. in 1939 to 551.3 hp. in 1940. On lines of the Virginia Public Service Co., with headquarters in Charlottesville, Va., air conditioning equipment totaling 297.80 hp. was installed in 1939 as compared to 569.20 hp. in 1940.

Industrial air conditioning installations in Detroit jumped from 281 hp. in 1939 to 8,016 hp. in 1940.

In the central and southern Florida areas served by the Florida Power & Light Co. of Miami, 1939 installations totaled 1,079.0 hp. as compared to 1940 installations of 2,051.1 hp. More than doubled were installations on the lines of the Gulf Power Co. in the Pensacola area, numbering 87.75 hp. in 1939 to 185.41 hp. in 1940.

Installation of self-contained room and store coolers gained considerably during 1940 over the previous year in several areas, including the following (horsepower):

	1939	1940
Baltimore	471.50	684.00
Dallas	122.35	290.79
Lawrence, Kan.	1.00	14.75
Milwaukee	108.53	181.24
Philadelphia	598.86	1,477.38

Commercial installations in Knoxville jumped from 10.0 hp. in 1939 to 222.0 hp. in 1940. On the Pittsburgh lines of the Duquesne Light Co., industrial installations increased from 20.75 hp. in 1939 to 555.25 hp. in 1940.

In the Manhattan borough of New York City, installations declined from 14,956.18 hp. in 1939 to 13,742.58 hp. in 1940 but the Bronx borough showed an increase from 786.74 hp. in 1939 to 1,525.45 hp. in 1940 and Brooklyn installations gained from 922.95 hp. in 1939 to 1,130.81 hp. in 1940.

1940. Queens' installations decreased from 2,511.41 hp. in 1939 to 1,525.66 hp. in 1940.

Decreases in air conditioning installations during 1940 under 1939 were reported by the public utility companies in Boston, Los Angeles, Richmond, Va., St. Louis, and Toledo.

The accompanying table shows the number and horsepower of air conditioning installations during the past two years together with the total installations in operation Jan. 1, 1941 in many cities.

### SUPREME UNIT COOLER



Adapted to refrigeration applications where perfect air distribution at low velocity is required.



BUSH MFG. CO.  
HARTFORD, CONN.  
610 N. OAKLEY BLVD.  
CHICAGO

**Bush**  
Mfg. Co.

COMMERCIAL COOLING UNITS

## JOE SERVICE "on the JOB !

NOW REMEMBER, JOE---THIS NEW CASE MUST WORK BETTER THAN THE OLD ONE, OR ELSE!

-O.K.-O.K.-

OLD MAN DINGLEHEIMER'S A CRAB--HE EXPECTS A VALVE ON HIS DISPLAY CASE THAT REGULATES PERFECTLY ALL THE TIME WITHOUT HUNTING. NO VALVES THAT GOOD, JOE, YOU KNOW IT.

IT'S NOT THE VALVE SO MUCH, JOE, IT'S THE CHARGE THAT COUNTS--TAKE SPORLAN FOR INSTANCE.

LOOK--SPORLAN'S THERMOSTATIC EXPANSION VALVES HAVE DIFFERENT CHARGES--EACH ONE FOR A DIFFERENT JOB. THIS ONE WITH THE "C" CHARGE IS FOR DISPLAY CASES. I HAVE A HUNCH IT'LL HELP YOU BURY THE HATCHET WITH OLD MAN DINGLEHEIMER.

O.K. I'LL TRY IT. BUT IT BETTER BE GOOD.

I'M PUTTING A SPORLAN VALVE ON YOUR NEW JOB, MR. DINGLEHEIMER. SEE, THEY'RE CHARGED DIFFERENTLY--THIS "C" CHARGE ONE IS DESIGNED FOR DISPLAY CASES.

H-M-M-M SOUNDS GOOD, BUT WE'LL KNOW BETTER AFTER THE CASE IS RUNNING A WEEK OR TWO.

LATER

JOE, YOU DID IT! THIS NEW CASE KEEPS MY MEAT JUST RIGHT. I'M PROUD OF IT!

THANKS!

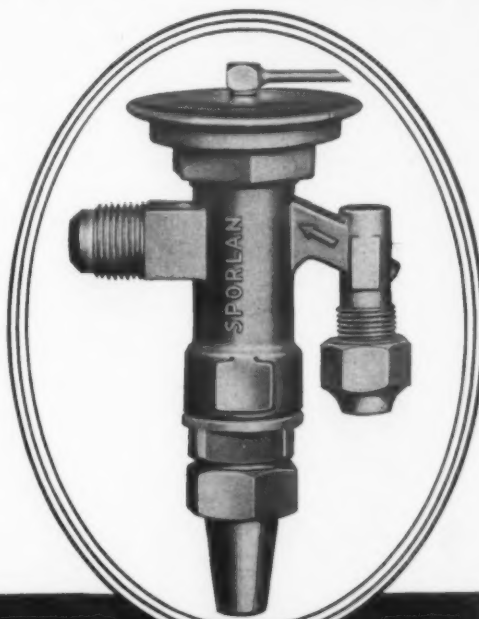
JOBBER THAT "C" CHARGE SPORLAN DID THE TRICK! OLD DINGLE AND I ARE BUDDIES NOW, AND SAY, GIVE ME ANOTHER "C" CHARGED SPORLAN. I'VE GOT ANOTHER DISPLAY CASE TO INSTALL AND I'M NOT TAKING ANY MORE CHANCES.

## Let SPORLAN Controlled Performance Valves Solve YOUR Installation Problems

Only Sporlan can offer you thermostatic expansion valves with selective element charges... charges designed to give the valves the best operating characteristics for each class of installation.

No longer is it necessary to depend on one charge for all types of refrigeration and air conditioning installations. No longer is it necessary to make excuses for valves that perform just so-so.


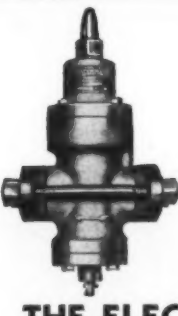
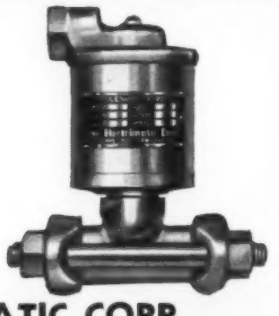
Standardize on SPORLAN Controlled Performance thermostatic expansion valves with Selective Charges and you can be assured of Peak Performance on every installation.



### SPOEHRER-LANGE CO.

3725 COMMONWEALTH AVE.

ST. LOUIS, MO.

**CONTROL VALVES**

**THE ELECTROMATIC CORP.**

2100 INDIANA AVE.

**CHICAGO, ILL.**



## Operating and Service Methods For Dry-Expansion Counter Freezers

By Arch Black and Dean C. Seitz

**Editor's Note:** This article contains information on Tuthill 1-gallon counter-type ice cream freezer, and is one of a series of articles on the servicing of counter freezers which have been appearing in issues of AIR CONDITIONING & REFRIGERATION NEWS in the past several months.

### Tuthill 'Freezette'

In addition to the 2½ and 5-gal. freezers, Tuthill has a 1-gal. model known as the "Freezette." This unit is fully automatic, self-contained, and designed for operation back bars, counter, or on a special Freezette auxiliary cabinet. The Freezette is particularly suitable for selling of frosted malteds, frosted fruit drinks, etc., direct from freezer to purchaser. It is fully automatic and by means of controls it is possible to produce the proper consistency of freezer products at correct temperature without the operator's constant attention.

While Tuthill 2½ and 5-gal. freezers are of the vertical type, in the 1-gal. freezer, dasher and beater rotate on a horizontal shaft. The other freezers mentioned employ the vertical type principle.

In this model, like the others, Tuthill uses direct expansion method

of refrigeration with coils wrapped and soldered to the freezer shell. Previous Tuthill freezers described used methyl chloride as the refrigerant. However, on the Freezette "Freon" is used and the full charge of refrigerant is 4½ lbs. One can readily ascertain whether or not there is a full charge of refrigerant in the system by comparing the operating head pressure of the condensing unit which should be within 10% of the pressure indicated on Table 7.

**Table 7—Operating Head Pressures in Freezette**

Room Temp. °F.	Approximate Head Pressure in Lbs. Per Sq. In. Gauge
20	54
30	62
40	71
50	81
60	93
70	108
80	123
90	142
100	160
110	185

From the information that can be determined from Figs. 32, 33, and 34, and that which the reader has

already learned from previous articles, mention will only be made of certain items as they affect the Freezette only.

#### Controls

##### EXPANSION VALVES

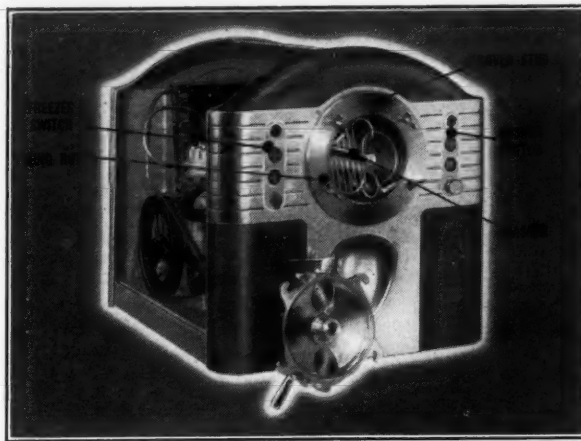
Again an automatic expansion valve is used in this system and the setting is 12 lbs. suction pressure.

##### THERMOSTATIC SWITCH

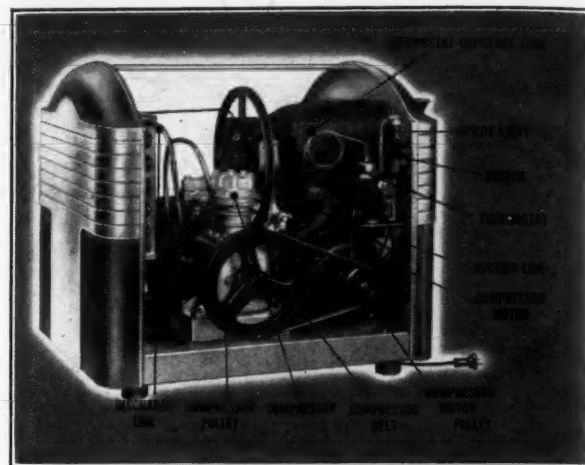
From Fig. 33 the location of the thermostat can be noted. The bulb of the thermostatic switch is installed flat against the bottom part of the freezer cylinder wall between the tubing and the wall.

It is wedged into place and insulated from the evaporator coil by sponge tubing with a metal strip to

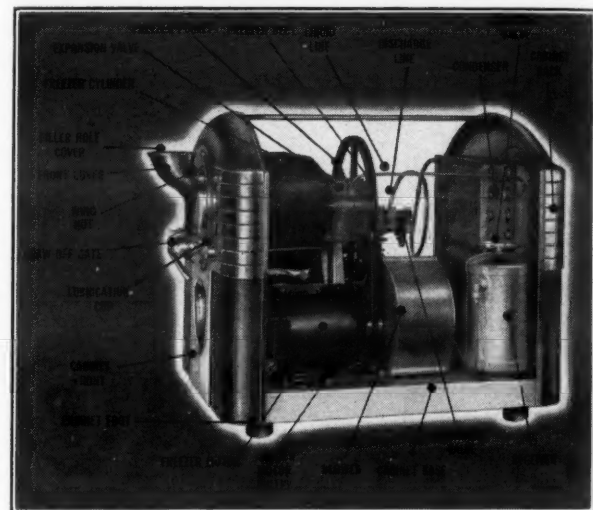
**Fig. 32—Front Cutaway**



**Fig. 33—Right Cutaway**



**Fig. 34—Left Cutaway**



These three views reveal the insides of the Tuthill 'Freezette' with locations of the important parts shown by labels.

aid in removing or installing. To gain access it is necessary to remove insulation from the cylinder end.

To change the differential of this thermostatic switch, the length of the lever arm is changed. To increase the differential (lengthen operating time and off cycle) move the arm closer to the fulcrum. Differential adjustment changes cut-out point only, the cut-in point remains constant.

##### PRESSURE SWITCH

As mentioned above, the Freezette is fully automatic, and thermostat

mentioned above controls temperature of the mix in the freezer. In the automatic cycle, dasher motor is controlled by a pressure control switch. This switch is regulated to start the dasher motor at a back pressure of approximately 14 lbs. and stop the dasher motor at a back pressure of approximately 16 lbs. By so operating this pressure switch gives the dasher motor a delayed starting and a delayed stopping in relation to the compressor motor.

In adjusting this switch, the same method is used to regulate it as that described for the thermostatic switch.

## Accurate, Thorough Records of Every Service Call Pay Real Dividends

ST. LOUIS—Making a complete and accurate record of every service call, large or small, and then systematically filing this record for ready reference has paid real dividends in the form of increased business to Frigid Refrigeration Service, authorized Frigidaire service firm here.

This company maintains 10 men in the field at all times, handling everything from minor repairs on small household units to major work on big air conditioning systems. The firm also does installation work for a dozen contracting companies.

But regardless of the size or type of job, each call receives the same thorough treatment in the company's filing system. Covering every single job handled by the company for the past five years, this file now contains some 20,000 names, each of which is classified in three ways—by district, name, and date.

Here's how the system works. Whenever a service call is phoned into the office, the office girl makes out a pink slip on which is stamped the date and the number of the call in sequence. Name and address of the customer requesting service are written on this slip, along with the customer's report of the difficulty. There also is a place for indicating whether the call is cash or charge.

This slip then is sent to the dispatcher's office, where the call is assigned to one of the firm's field men. Each man calls the office after completion of every job, and the new call is given to the man nearest to that customer's address. The name of this service man, the hour of the assignment, and the date are then stamped across the bottom of the slip.

At the end of the day the service man taking this call clips the pink slip to his regular Frigidaire work sheet, which gives a full report of the job, including serial number of

equipment, time spent, and how it was paid for. This work sheet, which is made out in triplicate, and the pink slip are turned in together.

Every record of this kind then goes into the files, where it is classified by both address and call number, so that it can be located at any time in the future.

**Anaconda Copper Refrigeration Tubes**  
"Assembling instructions"—details page 11 of new book

**THE AMERICAN BRASS CO.**  
FRENCH SMALL TUBE BRANCH  
General Offices: Waterbury, Conn.

**Dayton V-BELTS**

Silent, vibrationless, dependable, long-lasting. Powerful grip prevents slippage. A nearby distributor carries a complete stock for appliances and machines.

**THE DAYTON RUBBER MFG. CO., DAYTON, OHIO**  
World's Largest Manufacturer of V-Belts

# WHAT NEXT?

Almost press time.

"Knudsen said . . . Stettinius agreed . . . Vice President Wallace believes . . . Senator Rayburn predicted . . . OPM advises." Sensational news comes over the thin wire from Washington where the Publisher is calling the NEWS office in Detroit from his hotel room. He has just visited the men who are directing national defense. That's the skeleton of many recent phone calls from the nation's key-points direct to the editors' desks.

Messages loaded with information are relayed from the offices of government and industry leaders, key distributors and dealers, metropolitan service headquarters direct to NEWS readers.

There will be more of those phone calls, and it will be more and more important to know what was said, and how air conditioning and refrigeration will be affected. NEWS readers will know in time—time to do something about it, time to make the most of it. Those phone calls answer the question: "What Next?"

January 1, the NEWS predicted the aluminum shortage, and alert readers made the most of that. They helped boost January household sales to phenomenal heights. They read in February that the 12-month quota of 3,000,000 units was one-ninth filled—all records shattered before the selling season was under way!

A like heed was taken of price forecasts. Customers were shown the printed page, and they bought today.

In every field of the industry, NEWS readers are reaping profits—partly on the times, partly because they are making the most of the information which the NEWS brings them, and partly because they can use the impartial pages of the NEWS to prove the statements they make to prospects.

Profits are making them happy, but "what next" is puzzling manufacturers, distributors, dealers, and service men.

More and more business men in the industry

are turning to the pages of the NEWS for the security of the information which it offers.

More and more of them are *insuring their judgment* with a policy that's paying immediate and weekly dividends in facts about "what's next."

The cost is less than 1.2 cents a day—less than the cost of a daily newspaper. The news is boiled down, condensed and ready to use in your business. Generally it is two weeks to a month ahead of your daily paper—on industry news, on news that affects your job and your business.

The NEWS arrives on your desk weekly—four and one-third times a month. That's one reason why you are bound to know *what next* sooner. And, the NEWS is in newspaper format—big pages that are easier to read, that enable you to find what you want *quickly*. Month by month, they total more than 130 pages of the average 7 x 10-inch magazine page.

Six full-time staff writers, plus 100 paid correspondents in the field, are ready to go out and get news and information first-hand. And they go. They talk to manufacturers, distributors, dealers, and service men. They hear their story, their problems, and they report these problems and what is being done to solve them. They tell how the leaders get the most out of every dollar taken in.

For these good and real reasons, circulation is climbing. During 1940, approximately 75% of NEWS readers renewed their subscriptions—a remarkable record. They know they'll read first in the NEWS the facts about defense, labor and materials, product changes and prices—the answers to "what next." They understand that:

## IT'S IMPORTANT TO KNOW IN TIME.

**AIR CONDITIONING & REFRIGERATION NEWS**  
The Newspaper of the Industry — 5229 Cass Ave., Detroit, Mich.



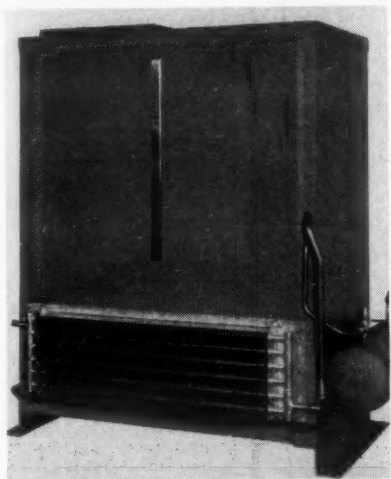
## What's New

Descriptions of some of the brand new items for the refrigeration and air conditioning, and major appliance fields.

### Saturated Air Used To Condense Refrigerant

ST. LOUIS—A "Saturated Air" condenser claimed to combine the more advantageous features of both the air cooled and evaporative types has been introduced by Curtis Refrigerating Machine Co.

This new condenser is said to provide an economical means of condensing vapors and to be particularly adapted for use in those localities where water rates are high, where ordinances restrict the use of water, and where increased water



demands have outgrown the water mains and sewers.

The "saturated air" unit is furnished complete with coils, fine mesh filtered screens, condenser blower, blower motor, and water pressure regulating valve. This valve automatically controls a small amount of water which is sprayed into the air stream of the condenser when the outside air temperature is too high to do the necessary condensing.

In operation, the discharge gas from the compressor is carried to two connection coils in the condenser. Room air or fresh air is drawn through one of the coils, where it is pre-heated by taking advantage of the super-heated gas. This increases the dry-bulb temperature and lowers the relative humidity of the air.

The air then passes through the filter screens which in turn are sprayed with a small amount of water. As the air passes through the screens it comes in contact with the large wet surface where by evaporation the dry-bulb temperature is lowered. The air then passes through to the second coil of the condenser where the refrigerant is condensed.

By employing evaporative cooling in the second stage, a low temperature is maintained through the second condenser coil, resulting in lower condensing temperatures.

Some of the advantages claimed for the unit are:

Uses less than 3 gallons of water per hour per ton under normal conditions.

No pump is required, so operating cost is less than for ordinary condensers.

Condenser will operate if water

supply is shut off inadvertently. It can be used year-around without any adjustment. Water will shut off when outside air temperature is low enough to condense efficiently.

No water pumps or floats are used, so added power costs and operating trouble are eliminated.

Water does not come in contact with coil, so the deposits of lime and other minerals customary in the evaporative condenser are eliminated. The unit will always operate at maximum efficiency without cleaning or renewing surface.

Condenser coils can be split into two sections, permitting operation of two compressors on one condenser.

Condenser is completely self-contained, and can be installed either inside or out of doors.

### Flexible Coupling Has Flexible Use

MILWAUKEE—New flexible coupling called the "Airflex," whose degree of resiliency can be readily changed to suit exact requirements of a particular application, has been introduced by Falk Corp. here.

The coupling consists of a resilient rubber gland lined with a pre-moulded, pre-vulcanized cylindrical section treated to prevent air loss. This lining is covered with multiple alternating layers of tough, durable fabric and live rubber. The entire gland is permanently bonded to steel inner and outer rims.

Special standard thread Schrader valve permits inflation of the gland. Changing the air pressure, either by a hand pump or air nozzle connected to the valve, varies the degree of elasticity of the coupling.

Designed for connecting Diesel, oil, gasoline, or gas engines to any type of driven machinery, the coupling is said to be excellent for use with motor driven compressors, etc. of a fluctuating torque nature. It is available in six standard types.

### Pneumatic Water Valve Announced By M-H

MINNEAPOLIS—A new pneumatically operated valve, called the "Gradutrol," which is designed to control the flow of water or steam in response to a pneumatic thermostat or temperature controller, has been introduced by Minneapolis-Honeywell Regulator Co.

Movement of the valve disc is accomplished by means of a scissors type linkage, said to permit more accurate control near the closed position of the valve. The company also claims that effects of variable steam pressure and friction in the packing gland are overcome by action of a built-in "Gradutrol relay" which provides maximum power to change the position of the valve disc even for slight changes in demand by the controller.

Bellows in the power unit is constructed of molded neoprene. Other features include an external indicator to show position of valve disc, a simple means for converting the valve from a "normally closed" to "normally open" type or vice-versa, and adjustments for maximum and minimum flow and for throttling range.

The valve body is single seated, bronze with brass trim, in sizes from 1/2 to 3 inches for screwed connections. The V-port guide may be adjusted for lift up to 3/4 inch maximum.

### 4-Ton FlakIce Machine Added To York Line

YORK, Pa.—A new FlakIce machine, capable of producing 4 tons of ribbon ice per day, has recently been announced by the York Ice Machinery Corp. The new machine is a companion to the 1-ton-per-day FlakIce unit which was successfully introduced last year.

Designed especially for conserva-

tion of floor space, the new unit can be suspended from the ceiling nearest the point where ice is needed; the only floor space necessary is the bin to catch the ice ribbons. A remote refrigeration unit is used with the device.

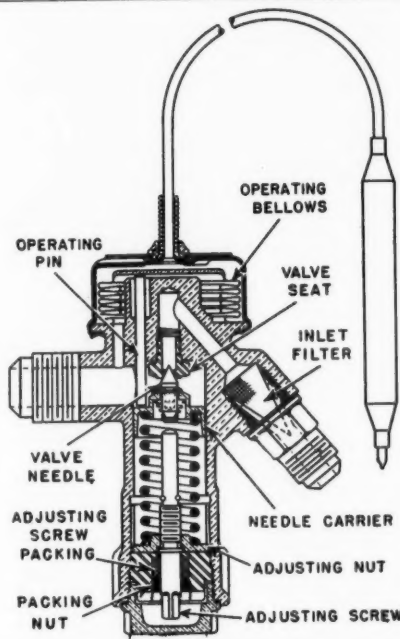
Connected to York refrigerating units of 5, 7 1/2, or 10-hp. capacity, the FlakIce machine will produce 4,700, 6,160, or 7,340 lbs. of ice per day, respectively, at a city water temperature of 60° F.

### New Principle Claimed For Frigidaire Valve

DAYTON, Ohio—Incorporating a new principle, Frigidaire's new Modulex valve is claimed to offer some new factors in expansion valve design and operation.

For example, it is said that only the thermostat bulb of the Modulex is sensitive to temperature changes. In one test a sponge saturated with refrigerant surrounded the entire valve and power element line, producing a -22° F. temperature, but the valve operation was not affected, although it was controlling a commercial evaporator held at 20° F.

The new valve uses an inert gas charge and a solid adsorbent. When the temperature of the adsorbent



increases, its ability to adsorb the inert gas decreases resulting in higher power element pressure. As temperature of adsorbent decreases, it adsorbs more inert gas and lowers the pressure on the power element. The inert gas never condenses or liquefies.

Extreme sensitivity to suction line temperature changes is claimed for the valve, because of its faster "reaction time." The valve can be installed in any position regardless of temperature conditions.

The valve is sealed against moisture infiltration, with all-metal power element cap being soldered to the valve body. All internal moving parts are accessible through the lower part of the valve, permitting service in the field. Liquid inlet fitting holds in place a protective screen, which may be removed for cleaning. Outlet connection is machined as a part of the valve body.

Needles are constructed of hardened stainless steel. Valve seats and valve adjustment spring are also made of stainless steel. The valve is designed with an adjustment to permit changing of super-heat setting if necessary.

Measuring only 3 3/8 inches high by 3 1/8 inches wide, the valve weighs about 14 ounces. It is available in five sizes from 3,000 to 48,000 B.t.u. per hour capacities.

## THE BUYER'S GUIDE

# WELDED STEEL

THE KOCH LINE IS *Complete*  
Walk-In Coolers, Commercial Refrigerators  
and all types of  
Display Cases

Koch does not manufacture or sell condensing units. Koch distributors therefore furnish the units they sell.

Write Today for Information on PROFIT POSSIBILITIES

**KOCH REFRIGERATORS**  
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NEW YORK  
PHILADELPHIA  
BRONX  
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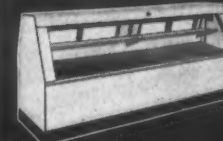
NEWARK  
DETROIT  
CLEVELAND  
ST. LOUIS



Tyler Reach-ins. Many sizes and door arrangements.



Refrigerated Vegetable Display, 6 or 9 ft. sizes.



Meat Display Cases. Top Display and Double Duty.

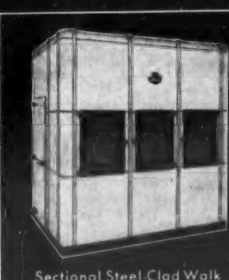
CLIMB ABOARD FOR BIGGER PROFITS!



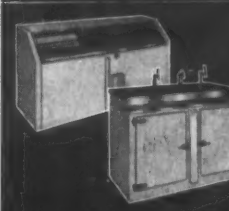
★ There's still time to tie up with Tyler—and really go places in '41. For this complete line is designed and built to fill every need—priced right. Buyers appreciate the extra value, too. Climb aboard now and get your share of profits!

TYLER FIXTURE CORPORATION  
Dept. R-3, Niles, Michigan

**TYLER DEALERS ARE MAKING MONEY!**



Sectional Steel-Clad Walk-In Coolers.



Tyler Dry-Kold Beverage Cooler and Draw-Kold Beer Dispenser.

**National Lock Co.,**  
Rockford, Illinois  
Manufacturers of  
**Commercial and Domestic REFRIGERATOR HARDWARE**



**CASH IN WITH**  
**REOL**  
**QUICK FROZEN FOOD DISPENSER**  
Write to  
**The REOL CO.** Heart Tower Baltimore, Md.

### RANCO TYPE G 2



**At Your Jobbers - and Out In Front!**  
**RANCO TYPE O**



**COMMERCIAL CONTROLS OF OUTSTANDING VALUE**



## York Distributors Urged To Cash In on Locker Plant & Home Cooling Markets

Growing Interest In Both Fields Is Cited

By Henry Knowlton

CHICAGO—Sales plans designed to take the "nuts and bolts" out of marketing air conditioning and commercial refrigeration equipment were presented to York distributors from the midwest area at one of a series of field meetings here last week.

Factory executives placed particular stress on packaged air conditioning equipment for residential and commercial application, locker plants, the York flake-ice machine, and presented the company's new line of small commercial compressors.

The meetings are being conducted in key cities by Walter Landmesser, Dean Seitz, P. H. Carlson, and E. A. Walsh of the home office staff. Dealers were welcomed to the Chicago meeting by George Westerlin, of Westerlin & Campbell, York distributor in the mid-west area.

In outlining the market for refrigerated locker storage plants Dean Seitz described the growth of the locker industry, attributing its progress to the benefits derived by locker customers. He stressed the fact that locker storage promotions have not become a "miniature golf" type of activity, but have developed into a sound, profitable business.

According to Mr. Seitz the best prospects for locker storage plants are existing butchers and grocers, who purchase small "back room" plants, ranging from 75 to 150 lockers. Another good source of prospects is to be found in the retired butcher, baker, banker, or candlestick maker, who has two or three thousand dollars he wants to invest in a small business which requires personal supervision.

The small plants make the most profitable sales for the refrigeration dealer, Mr. Seitz has found, because marketing equipment for these installations is creative selling, with little competition. Most large locker installations are highly competitive, and Mr. Seitz advised distributors to

## When Words & Music Mix



Walter Landmesser, manager of the York commercial refrigeration department and Dean Seitz, assistant manager, chat to the accompaniment of music provided by Marion Carter and Bob Vernon, at the banquet held for York distributors from the mid-west area following a meeting in Chicago. Approximately 100 men, including the entire Westerlin & Campbell sales force, attended the two-day sales session.



William Price of Knapp Supply Co., Muncie, Ind. leads York distributors in "community singing" before the banquet, held at the Drake hotel, Chicago, as Marion Carter and Bob Vernon play.

Discussing the growing interest in residential summer air conditioning, E. A. Walsh called attention to the rapidly changing character of the market. Summer cooling has not advanced as rapidly as it should in recent years, Mr. Walsh believes, because the business has been in the promotional, or sales development stage; no effective effort has been put forth to promote it; the public has considered it a luxury; no one has ever tried a real selling job; and summer cooling has not been tied in close enough with residential heating.

Mr. Walsh declared that the "pioneering" stage of the residential cooling business is about over, and with some 6,000 installations in use the industry is ready for a marked upswing, which means profitable business for dealers.

On the second point outlined, effective promotion, Mr. Walsh told dealers of the many promotional pieces York had prepared on packaged air conditioning, with one booklet entirely devoted to residential applications.

Equipment of this type is no longer a luxury, Mr. Walsh said, because it can be added to a \$10,000 home at a cost of \$4.40 per month on an FHA mortgage.

To illustrate how this worked out, Mr. Walsh used the following example:

	Without Cooling	With Cooling
Cost of Home .....	\$10,000	\$10,700
Down Payment .....	2,200	2,200
Mortgage .....	7,800	8,500
Payments (20 Yrs.) .....	\$51	\$55.40
Difference .....		\$4.40 per month

"Most of you dealers believe," Mr. Walsh charged, "that there is very little market for summer cooling equipment in residences, but when you look at these figures, you must realize that the business is now out of the luxury class."

To show that a real selling job would be effective, Mr. Walsh stated that some 75,000 homes were built in this country last year, in the \$10,000 and up class. Of these 40,000 were equipped with some form of winter air conditioning—and all are prospects for summer cooling.

Mr. Walsh urged dealers to go after new construction business with year-around systems, and also advised them to canvass the homes of people who own winter air conditioning systems. Up to the present time some 500,000 winter air condition-

(Concluded on Page 31, Column 1)

**Specify DRYERS THAT BEAR THIS LABEL**

CHARGED IN SILICA GEL WITH

Ask your Jobber

**Food Storage Lockers Is Our Only Business**

All our energy is devoted to the development and production of lockers. Write for particulars.

Master Refrigerated Locker Systems, Inc.  
121 Main St. Sioux City, Iowa

200,000 Masterbuilt Lockers in Use

**Use CHICAGO SEALS for seal replacements**

A complete line in all sizes

CHICAGO SEAL CO.  
20 North Wacker Dr., Chicago

**IT WILL PAY. GET OUR PROPOSITION ON CARBON BRUSHES**

M. G. VOLCKER - 112 E. 19 ST.-NEW YORK

**AMANA MAKES SENSATIONAL SALES RECORDS!**

New Amana "Plug In" Case, 6 ft. and 8 ft. sizes. 5-year guaranteed compressor unit. Triple glass front. Hard rubber doors and slides. An unmatched insulation. Write Amana now for facts on COMPLETE line. Desirable territories available to distributors.

**AMANA SOCIETY**  
Amana, Iowa

**TO SHERER FOR PROFIT WITH COMMERCIAL REFRIGERATORS**

Follow the profit road with Sherer. A complete line of display and storage refrigerators and full factory cooperation makes the going easier. Write for complete franchise details.

**SHERER**  
SHERER-GILLETT CO. MARSHALL, MICH.

**SHERER-GILLETT CO. MARSHALL, MICH.**

**BALANCED-ACTION for Easier Operation**

Balanced-Action equalizes pressures on both sides of the valve seat at the instant of opening. Equalization takes place through a balancing channel located in the valve stem. This exclusive Henry feature assures that the valve will always open positively and close easily.

**HENRY VALVE COMPANY**  
1001-19 N. PAULDING AVE., CHICAGO, ILL.

AND SOLD BY LEADING JOBBERS

**INCREASE YOUR INCOME WITH PERCIVAL**

The complete PERCIVAL line offers models and sizes for every purpose—making it the "Dealers Choice."

Write for complete information about PERCIVAL's attractive distributors proposition. You too can increase your Sales and Income "the Percival way"—so don't delay—write today.

**C. L. PERCIVAL COMPANY, BOONE, IOWA**

concentrate on the sale of smaller plants that are not purchased on an "auction block," or competitive bidding basis.

As part of a creative selling program on locker plants, York Ice Machinery Co. has prepared a "locker sales kit" containing complete printed information on plants, copies of various government bulletins, as well as information from the Universities of Wisconsin, Minnesota, Cornell, and other schools.

In this connection Mr. Seitz recommended that all York dealers, salesmen, and distributors purchase a copy of "Refrigerated Locker Storage," by P. B. Redeker, managing editor of AIR CONDITIONING & REFRIGERATION NEWS.

York salesmen interested in securing locker plant business were advised by Mr. Seitz to "forget the nuts and bolts, horsepower, coil sizes, and all technical phases of the refrigeration business."

What is essential, Mr. Seitz related, is to create a desire in the prospect's mind to own and operate a plant, create confidence in yourself, and assure the prospect of plenty of merchandising assistance in starting his plant in operation. After careful analysis of field conditions, Mr. Seitz has found that locker sales have hinged on these three points.

To create the desire for ownership of a locker plant, Mr. Seitz suggested using a survey published by the University of Wisconsin showing the rapid growth of locker plants in many states. He also recommended the use of "success stories," showing pictures of good locker plants, together with an account of how the business had been operated. Another sales tool in the creation of this desire is profit statements of locker plant operation, showing the investment, the expense, and how much money can normally be made at the end of the year.

To build confidence in the prospect's mind the locker storage salesman should know the essential details of plant layout, construction, refrigeration, plant costs, auxiliary equipment, rentals and charges, financing through the local bank, and locker merchandising methods.

Another way to build confidence, Mr. Seitz said, is to point out that some 900 York installations have been made among a total of approximately 3,200 locker plants now in use. Included in these totals are 47% of the installations made in Iowa, of which many have been made by the Amana Society, Amana, Iowa.

York salesmen were also urged to give prospective locker owners merchandising assistance in running the plant. Starting with the recommendation of an approved locker plant accounting system, this service also included assistance in the actual rental of the prospect's lockers.

Mr. Seitz pointed out that more schemes for renting lockers through churches, 4-H Clubs, and other groups were given in "Refrigerated Locker Storage" than in any other place, and he also recommended that York men read it "from cover to cover, as it contains all kinds of information on the locker business."

Because the lockers must be rented to make the business successful, Mr. Seitz urged that York men help the owner with newspaper advertising, handbills, direct mail, and other promotional methods. To interest prospects in the locker business York has published a booklet, "A Business Opportunity," summing up all features of locker plant ownership and operation.

*Entrance to all Points of Interest*

**New York's Popular HOTEL LINCOLN**

44TH TO 45TH STS. AT 8TH AVE.

OUR CHOICEST ROOMS From \$3

1400 ROOMS each with Bath, Servidor, and Radio.

\* Four fine restaurants awarded Grand Prix 1940 Culinary Art Exhibition

**MARIA KRAMER**  
PRESIDENT

**John L. Horgan**  
Gen. Mgr.

**HOTEL EDISON**  
SAME OWNERSHIP

**IN THE CENTER OF MID-TOWN NEW YORK**



## York Distributors See New Flake-Ice & Big V-W Units

(Concluded from Page 30, Column 5)

ing systems have been installed, and all are logical prospects for packaged cooling systems, Mr. Walsh believes. Summer air conditioning should be tied in closely with the automatic heating business, Mr. Walsh said, because architects, general contractors, builders, and owners do not favor divided responsibility. They want to give the heating and cooling contract to one concern, he has found. For this reason the "market of tomorrow" for summer cooling in residences depends on the sale of automatic winter air conditioning systems now, Mr. Walsh said.

Sales of York Flake-ice machines have developed beyond the original projections of York executives, and interest in them continues to grow, declared Walter Landmesser, in presenting the company's new ribbon ice machine which makes up to 4 tons of ice per day. Acceptance of the new model was demonstrated by the fact that a York dealer in San Francisco sold one of the machines over long distance telephone to a prospect in Phoenix, Ariz. the day the new unit was announced.

In cities where dealers have taken an interest in the machine, and used an effective selling story, the sales record has been excellent, Mr. Landmesser said.

## Engineer Meets Executive



Otto C. Zuber, refrigeration engineer for Amana Society, Amana, Iowa, discusses the locker plant market for refrigeration with George Westerlin, president of Westerlin & Campbell of Chicago.

The selling story on the Flake-ice machine is based, for the most part, on the fact that use of the machine effects a saving for the owner. In most territories, with normal power and water costs, the flake-ice maker will pay for itself in less than three years of use, and at the same time provide a superior quality ice, it is claimed.

Ribbon ice from the machine is used in the same way as cracked ice; to pack meat, poultry, and fish; in cold beverages of all kinds; in displays of salads and other foods; and in general kitchen service use.

The machine may be placed anywhere that flake-ice is required, and operated by a remote 5, 7½, or 10-hp. compressor. Owner experience indicates that more and more machines will replace harvested, crushed ice, Mr. Landmesser said. The company will continue to market and sell the smaller, self-contained ribbon ice machine which was introduced last year.

The York V-W line of large refrigeration machines was presented by P. H. Carlson, who explained exactly why the machines of this type can be mounted on upper floors without special foundations. A multiplicity of cylinders, static and dynamic balancing, and precision in manufacturing of all parts accounted for the smooth operation of the machines, Mr. Carlson said. He also pointed out that all control valves were designed to prevent any undue restriction of refrigerant flow, thereby making for higher efficiency and less vibration in operation.

As an example of how the V-W machines can be used in multiple, Mr. Carlson described an aircraft factory installation in California where 60 machines were slung from the ceiling, in order to save floor space. Total refrigeration produced by these relatively small machines was 2,000 tons. Mountings of this type are only possible with the V-W design, Mr. Carlson stated.

## Locker Briefs ..

### MAPLE PLAIN, MINN.

MAPLE PLAIN, Minn.—Maple Plain Locker Plant, Inc., which was opened here in January, has already found it necessary to add 25 new lockers. At a recent meeting of the plant's board of directors, it was decided to institute and maintain indefinitely an intensive advertising program. Laverne Schroeder is manager.

### DELANO, MINN.

DELANO, Minn.—L. J. Rieder has offered to open a frozen food locker plant in conjunction with his meat market here "whenever the people of this community feel a real need for such an establishment."

### ELLENDALE, N. D.

ELLENDALE, N. D.—Merle Johnston is arranging to construct a cold storage locker plant at the corner of 3rd St. and 2nd Ave. here. Plans call for 328 lockers to start, with space for additional units when needed.

### SULLIVAN, ILL.

SULLIVAN, Ill.—A 400-locker frozen food storage plant is being added to the Shasteen Grocery & Meat Market here. It will be operated by Lewis Shoop of Decatur, Ill.

### WARREN, MINN.

WARREN, Minn.—Warren Cooperative Creamery has awarded contracts for the construction of a \$10,000 frozen food locker storage plant here.

### GOLDSBORO, N. C.

GOLDSBORO, N. C.—The Farmers Cooperative Service & Exchange, Inc. has reconditioned the old Farmers Cooperative plant at the old Wayne County fair grounds here, installing a cold storage locker plant.

### DALLAS, TEX.

DALLAS, Tex.—Contract for the building of a modern frozen foods locker plant at Bonham, Tex., has been awarded Dallas Air Conditioning Co., Inc. York equipment will be installed.

### FREMONT, NEB.

FREMONT, Neb.—A 750-locker frozen food storage plant has been installed by York Ice Machinery Corp. for Fremont Frozen Foods Co. owned by Mr. Hammang. This system, which is powered by a 7½-hp. compressor, uses ammonia as refrigerant.

### SOUTH SHORE, S. D.

SOUTH SHORE, S. D.—W. E. Mollberg has started remodeling the building in which he plans to install a 150-locker frozen food storage plant.

## CLASSIFIED ADVERTISING

RATES: Fifty words or less in 6-point light-face type only, one insertion, \$2.00, additional words, four cents each. Three consecutive insertions, \$5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Air Conditioning & Refrigeration News, 5229 Cass Ave., Detroit, Mich.

### POSITIONS AVAILABLE

LONG established, well and favorably known manufacturer of an up to the minute line of commercial refrigerators wants an experienced, capable, successful field man. A genuine opportunity for excellent earnings. Salary and all expenses and bonus. Our people know about this ad, so don't hesitate to write, giving age, experience, and full information about yourself in strict confidence. Write Box 1321, Air Conditioning & Refrigeration News.

### POSITIONS WANTED

TECHNICIAN desires connection with service firm, dealer, or distributor. B.A. degree and graduate from Air Conditioning Training School, Youngstown, Ohio. Four years experience, including one with Carrier distributor. Free to begin work after May 23. Write Box 1322, Air Conditioning & Refrigeration News.

### FRANCHISES AVAILABLE

JOBBER distributors wanted for the famous Multiplex Dispenser for soda, seltzer, coca cola, ginger ale, etc. The Multiplex fixture dispenses seltzer at 1¢ per gallon, other drinks at 1½¢ each. MULTIPLEX FAUCET CO., manufacturers of dispensing fixtures for 35 years, 4319 Duncan Ave., St. Louis, Mo.

GENERAL Refrigerator Company is announcing the new 1941 line. General Display Cases, Reach-In Cabinets, Walk-In Coolers and Beer Pre-Coolers. For almost half a century we are manufacturers of the highest quality commercial refrigerators. Compare with other higher priced lines. Write in for prices and discounts on the biggest money making line in the country. GENERAL REFRIGERATOR CO., 5th & Bainbridge Sts., Philadelphia, Pa.

SELL refrigerator display cases, walk-in coolers, reach-in refrigerators, refrigerating units, to meat markets, grocers, taverns, etc. Financing arrangements to help sell. Write for full information or see EHRICH REFRIGERATOR MFG. CO., St. Joseph, Mo., Dept. A.

## BUSINESS OPPORTUNITIES

REFRIGERATION Supply Jobber Business—Sickness compels sale, successful going jobbing business. Established over six years; large productive trade area. Well equipped, centrally located store. Clean fast moving inventory, stocks of leading lines, exclusive on many. Large clientele, repeating satisfied customers. Box No. 1320, Air Conditioning & Refrigeration News.

## EQUIPMENT FOR SALE

REBUILT and "as is" refrigerators and vacuum cleaners. Rebuilt refrigerators guaranteed for 30 days. Rebuilt vacuum cleaners guaranteed for one year. All merchandise guaranteed to look and operate like new. Send for latest catalog. MERCHANDISE TRADING CO., 147 W. 42nd St., New York, N. Y.

HERE IT IS! Three catalogs in one. General Electric, Westinghouse, Majestic, Grunow Hermetic Units and compressors. Frigidaire, Kelvinator, Norge, Crosley, etc., compressors, evaporators, and parts. Complete line refrigeration parts, tools, and supplies. Write for your copy on your letterhead. SERVICE PARTS CO., 1101-3 N. 24th Ave., Melrose Park, Ill.

GRUNOWS "as is" but complete—\$12.00 each. Many late models. Write for stock list. Also available complete line of "as is" and rebuilt commercial units; new Westinghouse air conditioning low-sides; new Fedders condensers and other surplus material. Write for details. ASSOCIATED REFRIGERATOR PLANT, INC., 3028 W. Hunting Park Ave., Philadelphia, Pa.

## REPAIR SERVICE

GENERAL ELECTRIC DR1-DR2 Monitor Top Units exchanges \$25.00 F.O.B. our factory. Send your defective unit. On receipt we make immediate shipment of completely rebuilt, refinished unit with one year guarantee. Like new in every respect. Westinghouse and other hermetically sealed units, prices on request. MACKLAM REFRIGERATOR SALES &

SERVICE CORP., 220-222 W. Huron St. Chicago, Ill.

CONTROL REPAIR Service. Domestic controls reconditioned equal to new at a small cost. All work guaranteed for one year. Prices upon request. UNITED SPEEDOMETER REPAIR CO., INC., 342 West 70th Street, New York City.

CONTROL REPAIR service. Your controls repaired by expert mechanics, with special precision equipment. Supervised by graduate engineers. We stress perfection and dependability before price. One year guarantee on domestic controls. Any bellows operated device repaired. HALELECTRIC LABORATORY, 1793 Lakeview Road, Cleveland, Ohio.

## PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

## BUNDY TUBING

ENGINEERED TO YOUR EXPECTATIONS

BUNDY TUBING CO., DETROIT

## "FREEZING OVEN"

the "Successor to the Pipe Coil for low Temperatures (below 32°)

KRAMER-TRENTON CO. TRENTON, N. J.

## 'ARMOR-CLAD' WALK-IN COOLER



- ★ALL STEEL EXTERIOR
- ★LOW IN COST (Due to volume production)
- ★REAL FLEXIBILITY (Easily enlarged by adding sections)
- ★EASY TO ERECT (2 unskilled workmen sufficient)
- ★SMALL STANDARD-SIZE SECTIONS (Portable and easy to handle)
- ★UNLIMITED RANGE OF SIZES
- ★PROMPT SHIPMENT

FOGEL REFRIGERATOR COMPANY, Since 1899 Philadelphia, Penna.



## PREVENT WAX and CARBON with an AMINCO Oil Separator

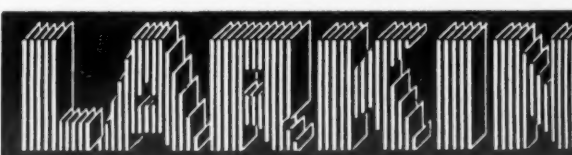
Aminco Oil Separators remove oil from gases as they leave the compressor and return it automatically to the crankcase; preventing oil-logged evaporators and increasing the efficiency of the unit. Helps to prevent the formation of hard carbon and wax deposits by separating entrained moisture from the oil and settling it in a sump where it can do no harm.

Send for Bulletin No. 14

## AMERICAN INJECTOR COMPANY

1481 FOURTEENTH AVENUE, DETROIT, MICH. Pacific Coast: Van D. Clothier, 1015 E. 16th, Los Angeles Export: Borg-Warner International Corp., 310 S. Michigan Avenue, Chicago, Ill.

## Refrigeration Products



Profits bloom in the greater efficiency your customers find in LARKIN equipped units. See your jobber or write today.

## LARKIN COILS, INC.

519 Memorial Dr., S.E., Atlanta, Ga.

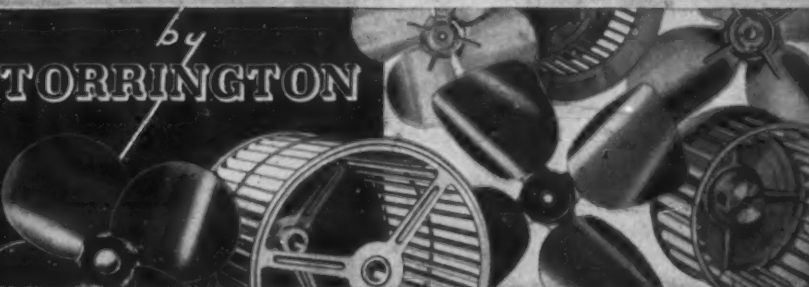
- Patented CROSS-FIN COILS—
- Bare Tube Coils—
- Humid-Temp Forced Convection Units—
- zinc Plated Steel Plate Coils—
- Disseminator Fans—
- Heat Exchangers—
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- Instantaneous Water Coolers—

ME ONLY WEAR TOP HAT IN EASTER PARADE - BUT CHIEFTAIN COMPRESSORS GIVE TOP HAT PERFORMANCE ALL THE TIME!

TECUMSEH PRODUCTS CO. TECUMSEH, MICH.



## Fan Blades and Blower Wheels



THE TORRINGTON MANUFACTURING CO. of TORRINGTON, CONNECTICUT

**KERO TEST**  
Valves and Fittings  
The Standard of the Industry  
Kerotest Manufacturing Co.  
Pittsburgh, Pa.

**DISTRIBUTORS WANTED**  
For the Famous Multiplex Dispenser for Soda, Seltzer, Coca-Cola, Ginger Ale, etc. The Multiplex Fixture Dispenses Seltzer at 1¢ Per Gallon, Other Drinks at 1½¢ Each.  
**MULTIPLEX FAUCET COMPANY**  
Manufacturers of Dispensing Fixtures for 35 Years  
4325 Duncan Ave., St. Louis, Missouri

**BE SURE OF DELIVERIES**  
Buy **Fedders COILS**  
AND HAVE THE ADVANTAGES OF ALL COPPER CONSTRUCTION  
FEDDERS MFG. CO., BUFFALO, N. Y.

Dealers Wanted for Midwestern and Southern States  
**CAMPBELL REFRIGERATOR CO.**  
Milwaukee, Wis.

For Highest Air Filtering Efficiency, Demand—  
**AIR-MAZE**  
Permanent Air-Filter Panels  
AIR-MAZE CORP., CLEVELAND, OHIO

**MUELLER BRASS CO.**  
Port Huron, Mich.  
**TRIPLE SEAL DIAPHRAGM VALVE**  
Longer Diaphragm Life  
Positive Sealing at Three Essential Points

**SPECIFY Virginia REFRIGERANTS**  
**VIRGINIA SMELTING CO.**  
Located at tidewater WEST NORFOLK, VA.



## Expanded Appliance Uses Seen As 'Cushion' Against Post-War Industrial Let-Down

(Concluded from Page 1, Column 1)

he said. On the farm, increased production of foodstuffs and better living also have been made possible through new electrical aids.

To balance this greater use, the power industry is today producing four and one-half times as much electrical energy than it was in 1917, Mr. Fisher declared, with more than 90% of it produced by private utilities.

Problems which the utility industry may have to face in the post-war period, he continued, include: Post-war inflation, ever-mounting tax revenues, maintenance of the "American standard" of living, and the fostering of better industrial efficiency to lower production costs and increase production.

Electrical appliances were a \$400,000,000 business in 1940, Mr. Fisher declared, an average expenditure of \$32 per family for electrical home equipment during the year. Both power and products now cost less than ever before, he pointed out, and are the most efficient, economical yet developed.

Competition from foreign markets will be intensified after the war, he declared, so that American production must be at its peak of efficiency to hold its place in the world picture and maintain wages, hours, and working conditions in this country at their present high levels.

### 'SELECTIVE SELLING' URGED

Important in the task before the power industry today, Mr. Fisher said, is to formulate a program of "selective selling" to domestic customers, with an eye toward keeping "electrical living" in the foreground. Service policies also should be reviewed, he advised, to be certain they are sound. A program of market data and research to determine post-war needs also should be undertaken, the idea being to formulate a clear picture of the effect of changing conditions, shifts in buying power, and the new uses to which electric power and equipment might be put.

Effective use of dealer merchandising outlets will figure importantly in post-war methods, Mr. Fisher asserted. Use of dealers in developing markets for new equipment, and increasing present markets, cannot be overemphasized, he said. Present trend toward better dealer cooperation, Mr. Fisher advised, is sound, and should at all costs be fostered as a bulwark against possible future emergencies. As evidence of what utilities are now doing in this direction, he pointed out that in 1940 only 12% of all appliance sales were made by power companies, as compared with 60% in 1917, when we entered the first World War.

All present constructive selling movements, such as the Modern Kitchen Bureau, should be sustained and augmented, Mr. Fisher declared. Sales training, of both utility and dealer employees, should be continued and enlarged. Moves such as these, he concluded, will prove valuable in sustaining national morale by keeping up the American standard of living during the post-war period.

### DEVELOP HOME MARKET

Keep up the selling tempo, but concentrate efforts on those appliances and equipment most likely to be continued in use after defense activities diminish, advised H. P. Liversidge, president of Philadelphia Electric Co.

Continued development of residential business, he asserted, will be necessary to maintain the balance in view of increased industrial production and the greater load demanded there. Otherwise, he cautioned, the percentage of domestic usage, now about 23%, may be diminished to the point where utilities will be faced with a serious problem, once industrial usage falls off.

The domestic field now offers a rare merchandising opportunity to both dealers and the utilities, Mr. Liversidge declared. Purchasing power is on the increase, especially among low-income groups, and it is here that the use of labor-saving electrical appliances most needs to be built up.

Increased power sales are sure to follow increased sales of appliances, he emphasized—and the time to develop both is when purchasing power is high. By promoting sales of such equipment, the power industry also

will be helping to keep normal production steady—and thus provide a cushion against any later industrial let-down, he said. Planning now for the post-war period may prove to be a life-and-death matter for many branches of the industry, Mr. Liversidge declared.

Foresight and caution are needed in serving industrial power needs, the speaker asserted. Biggest problem, he said, is in the new plants now going up, rather than in extension or rehabilitation of present plants. Power usage in this field is certain to be very large—and the industry's problem is to set standards for later use of power, and to develop new electrical applications which can be relied on as steady power users.

Industrial air conditioning was pointed out as one application of electricity which would likely be continued in use, once it was installed, regardless of general business conditions.

In the commercial field, Mr. Liversidge said, customers will have more money to spend as a result of the defense program, and so increased sales should result. He cautioned, however, that sales emphasis in this field should be placed on new types of equipment, and equipment most likely to be kept in use as a "necessity" during the post-war period.

### DON'T LOWER STANDARDS

All-importance of defense production was recognized by speakers at the "national defense" luncheon session which closed the conference—but it was emphasized with equal force that neither the power nor the electrical manufacturing industry can afford to go "all-out" on meeting such requirements at the expense of normal peace-time production efforts.

"Regular production must be maintained despite the extra pressure of defense production," said C. H. Lang, manager of apparatus sales for General Electric Co. "This nation must defend the American standard of living just as vigorously as it is preparing to defend our American ideals of government and the 'American way' of life."

"If, in this emergency, it should become necessary to curtail production of our normal products, the 'electrical-consciousness' of the country must be defended and maintained at all costs. In this task, both power companies and manufacturers must cooperate to defend our free enterprise system—to keep the 'business as usual' sign out as long as possible for both products and prices."

"We must keep our distribution channels and our customers open, even though we may not, in all cases, be able to supply them with goods as promptly as in the past. In the economy of the future, the electric kitchen may in reality prove more important than the 'flying fortress' of today."

With more than a billion dollars in defense contracts, the electrical industry is now manufacturing the most widely varied line of products for defense of any in the country, Mr. Lang declared. Some of these products, he said, must be built quickly and in great quantities—others are being manufactured in strictest secrecy, and all are of the type demanding fine craftsmanship and precision.

### NEW PRODUCTS FORESEEN

Out of new products for defense still in the laboratory, Mr. Lang predicted, will come developments for peace-time equipment that may open new eras to the industry. General Electric's own defense production, he added, is now more than two and one-half times what it was only six months ago.

Despite the extra burdens placed on it by defense requirements, the electrical manufacturing industry will continue to do its job for both country and customers to the best of its ability, Mr. Lang promised. "Have faith in us," he asked. "We won't let you down."

Importance of maintaining the "business as usual" theory also was emphasized by C. W. Kellogg, president of Edison Electric Institute, who declared that power companies must help "cushion" the post-war shock by developing new uses for the extra load now being developed to meet defense needs. The residential load, if developed now through increased appliance sales, can easily absorb

most of this surplus power, he declared.

Reports of a threatened "power shortage" were labeled by Mr. Kellogg as "one of those things which is always supposed to be about two years away, and which never actually develops." The private utility industry in 1941 is adding 6½ million kilowatts to its present capacity of approximately 40 million kilowatts, he said—sufficient for defense and all other needs.

### HELP BUILD MORALE

Larger industrial payrolls make this an ideal time to work toward increased use of appliances in the home, he declared. Extension of home electrical equipment also plays its part in defense by bolstering the national morale, giving people more interest and pride in their home surroundings. Also, with expanded production and 24-hour-a-day factory shifts, electrical appliances become even more important in the preservation and preparation of foods at unusual hours of the day and night.

All this may mean much to the national morale, Mr. Kellogg emphasized, particularly in the homes of workers who can now enjoy such modern conveniences for the first time because of their employment in defense industries.

### 'Speed Queen' Profits Up

RIPON, Wis.—Net profit of \$311,396 for 1940, compared with \$201,746 in 1939, was reported by Barlow & Seelig Mfg. Co. Gross profit on sales totaled \$1,144,020, compared with \$949,803 in 1939. American Ironing Machine Co., partly owned subsidiary, had a net profit of \$47,915.

## U. S. Court Rules Wages & Hours Law Binds Distributors Buying Out of State

(Concluded from Page 1, Column 5)

beginning big and the ending little. In such a case, the commerce is the same throughout and the figures are congruous. Under the circumstances, Alterman and his business is not any the less engaged in commerce because it does not further carry on the stream of commerce into another state. . . .

"If the contention that wholesale grocers may remove themselves from engaging in interstate commerce by confining their sales and shipments to one state be correct, it must follow that the consequent establishment of 48 separate trading areas, by states, and confined to state boundaries, could result without concern or interference by the national government, and this despite the great dislocation of present commerce which would result. Such is contrary to the fundamentals underlying the adoption and employment of the commerce clause for the protection and promotion of uninterrupted national commercial intercourse.

"The question cannot be determined on the basis of preference or abhorrence of centralization of Federal authority. Power to regulate commerce has existed from the adoption of the Constitution. Fundamentally, it is the immense broadening of the scope of commerce rather than centralization by Federal regulation which has called forth (and doubtless will continue to require) ever-widening application of the long existent

power. . . .

"The question of whether there is subsequent interstate shipment furnishes one test of interstate commerce, but does not supply a definite and unvarying standard which may be applied to all transactions to measure and define their inter- or intra-state character. Of necessity, each transaction and business must be determined in the light of all surrounding circumstances. . . ."

## Store Cooler Used For Heating, Too

OMAHA, Neb.—An example of the growing practice of heating small commercial buildings with self-contained store cooling units, as well as providing relief from excessive summer temperatures, is found in Hosman's Merry-Go-Round and Drive-In Circus here. Hosman's is a restaurant of the "deluxe hamburger" variety.

Well advertised by a glass enclosed merry-go-round, complete with horses and riders, atop the building, Hosman's is heated and cooled with a 3-ton Trane self-contained air conditioner, equipped with a blast hot water coil. Hot water from an oil-fired boiler is piped to the conditioner and to unit heaters which serve the kitchen. Air conditioning equipment was installed by B. Grunwald, Inc.



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